#### Lockheed Martin

Scientific Engineering Response and Analytical Services 2890 Woodbridge Avenue Building 209 Edison, NJ 08837-3679 Telephone 732-321-4200 Facsimile 732-494-4021



DATE:

February 2, 2011

TO:

Philip Campagna, ERT Work Assignment Manager

FROM:

Antonio LoSurdo, SERAS QA/QC Chemist

THRU:

Deborah Killeen, SERAS QA/QC Officer

SUBJECT:

Verification of Delayed Coker Unit Release Data

#### INTRODUCTION

SERAS personnel were requested to validate the TPH and PAH data for the water samples analyzed by Louisiana State University (LSU) for the Delayed Coker Unit Release. Raw data for a total of 58 water samples along with the standards and quality control (QC) samples were requested along with a copy of the standard operating procedure (SOP) used to analyze these samples. LSU-RCAT SOP#001-08 titled "Standard Operating Procedure for Oil Spill Source Identification" was received and reviewed by SERAS personnel.

During the review, it was noted that this method is used for general qualitative oil characterizations and quantitative analysis of a list of target compounds found in oil. This SOP is based on American Society for Testing and Materials (ASTM) D-5739-00 and EPA SW-846 Method 8270. Because this SOP does not routinely require a decafluorotriphenylphosphine (DFTPP) tune, it was determined that the PAH data could not be validated in accordance with the National Functional Guidelines since all PAH data would be rejected under these circumstances. The LSU SOP does not require a resolution check or a mass resolution check. Instead a decision was made to verify the data based on the SOP supplied by LSU. Verification confirms by examination of the raw data that the specified requirements of the SOP had been followed.

#### VERIFICATION FINDINGS

SERAS personnel reviewed the submitted data using the following data categories to verify the data: Holding Time, Instrument Performance Check, Method Blanks, Calibration (Initial and Continuing), Internal Standards, Laboratory Control Samples, Duplicate Analysis, Compound Identification and Reporting Limits.

Holding Time – All samples were analyzed within holding time based on the documentation supplied. Chain of custody (COC) records were not available for the 48 samples extracted by Pace Analytical. The collection time recorded on Pace's extraction log records that appears to be generated by their Laboratory Information Management System (LIMS) was used to verify collection dates.

Instrument Performance Check – Perfluorotributylamine (PFTBA) was used to auto-tune the Gas Chromatograph/Mass Spectrometer (GC/MS) in accordance with the LSU SOP. Environmental applications also require the use of DFTPP to verify the tune for PAHs (EPA Method 8270), which was not used by LSU. DFTPP is not required by ASTM D5739-00.

Method Blanks – TPH concentrations were less than the method detection limits (MDLs) and the reporting limits (RLs). There were concentrations of PAHs present in the method blank under the RL but above the MDL.

Initial Calibration – The percent relative standard deviation (%RSD) and the average relative response factors (RRFs) met the QC criteria stipulated in standard EPA methods. It was assumed that the data submitted in the spreadsheet from LSU is correct since it was not possible to verify the raw data directly from the instrument. This includes area responses and retention times.

Continuing Calibration – The percent difference (%D) met the  $\pm 20\%$  criteria in the LSU SOP with the exception of three compounds in one continuing calibration. As stated above under the initial calibration, it is assumed that that the data submitted in the spreadsheet from LSU is correct since it was not possible to verify the raw data directly from the instrument. This includes area responses and retention times.

Internal Standards – Retention times could not be evaluated for any of the standards, samples or QC samples since this information is not captured into the spreadsheets used by LSU. The internal standard responses met the criteria stipulated in standard EPA methods.

Laboratory Control Sample – A laboratory control sample (LCS) and a LCS duplicate (LCSD) for TPH were available for the 10 samples extracted by LSU. The TPH recoveries and the relative percent difference (%RPD) were acceptable. LCS/LCSD samples for PAHs were extracted for the three batches extracted by Pace Analytical.

Compound Identification and Quantitation – The initial data received from LSU did not take into account that the sample injection volume is  $2~\mu L$  instead of the  $1~\mu L$  used for the standards. As a result, all results were corrected by a factor of 2. Some compounds initially reported as a "U" under the MDL on the corrected tables are now above the MDL but under the RL (Refer to Attachment 1). The MDLs and RQLs reported for RCAT No. 2010356-13 reflects a 10 time dilution for all of the compounds except nC-10 Decane. This cannot be confirmed and SERAS is under the assumption that these MDLs and RLs should be adjusted to reflect a straight run.

### CONCLUSIONS AND RECOMMENDATIONS

TPH and PAH data were generated for 58 water samples by LSU in accordance with LSU-RCAT SOP#001-08. This method is an oil fingerprinting method for oil analytes. The TPH and PAH data are acceptable based on the requirements of the LSU SOP.

If a crosswalk between the samples analyzed by LSU and the ERT/SERAS Laboratory can be made, the use of two independent methods may lend credence to the acceptability of the PAH data not analyzed with a DFTPP verification tune.

Cc: Central Files, SERAS-116

Electronic File SERAS-116-DTM-020211 Phil Solinski, SERAS Task Leader Dennis Miller, SERAS Program Manager

### ATTACHMENT 1 Final Results – Corrected Technical Memorandum February 2011

### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Client:	Hovensa		
Project Name:	St. Croix Spill		

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Client ID	152791 BLANK	152792 LCS	152793 LCSD	3523810-001 PS
RCAT ID	2010355-01	2010355-02	2010355-03	2010355-04
Sample Matrix	Water	Water	Water	Water
Analytical Instrument	Mustang	Mustang	Mustang	Mustang
% Moisture	0	0	0	0
% Lipid				
Sample Size	1000	1000	1000	1051
Sample Unit-Basis	ml	ml	ml	ml
Units	ug/L	ug/L	ug/L	ug/L
nC-10 Decane	U	U	U	U
nC-11 Undecane	Ū	Ü	Ü	U
nC-12 Dodecane	U	Ü	11	U
nC-13 Tridecane	Ū	0.015 J	Öl	1.017 J
nC-14 Tetradecane	U	U	ا ل	U
nC-15 Pentadecane	U	Ü	U	U
nC-16 Hexadecane	U	0.041 J	- U	Ü
nC-17 Heptadecane	U	U	U	U
Pristane	U	U	Ü	Ü
nC-18 Octadecane	U	U	U	U
Phytane	U	U	U	U
nC-19 Nonadecane	U	U	U	U
nC-20 Eicosane	U	U	U	U
nC-21 Heneicosane	U	U	U	0.049 J
nC-22 Docosane	U	U	U	U
nC-23 Tricosane	U	U	U	0.045 J
nC-24 Tetracosane	U	U	U	0.067 J
nC-25 Pentacosane	U	U	U	0.237 J
nC-26 Hexacosane	U	U	U	0.195 J
nC-27 Heptacosane	U	U	U	0.202 J
nC-28 Octacosane	U	U	U	U
nC-29 Nonacosane	U	U	U	0.201 J
nC-30 Triacontane	U	U	U	0.116 J
nC-31 Hentriacontane	U	U	U	0.128 J
nC-32 Dotriacontane	U	U	U	U
nC-33 Tritriacontane	U	U	U	U
nC-34 Tetratriacontane	U	U	U	U
nC-35 Pentatriacontane	U	U	U "	U
Total Alkanes	0.000	0.056	0.900 (), (	1.24

Surrogate Recovery (%)				
5 Alpha Androstane	0	0	0	0

### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

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Project Name:	St. Croix Spill			
Client ID	152791 BLANK	152792 LCS	152793 LCSD	3523810-001 PS
RCAT ID	2010355-01	2010355-02	2010355-03	2010355-04
Sample Matrix	Water	Water	Water	Water
Analytical Instrument	Mustang	Mustang		
% Moisture	0	•	Mustang	Mustang
% Lipid		0	0	0
'	0.000	0	0	0
Sample Size	1000	1000	1000	1051
Sample Unit-Basis	ml	ml	ml	ml
Units	ng/L	ng/L	ng/L	ng/L
Naphthalene	U	2960	2960	U
C1-Naphthalenes	U	U	U	Ū
C2-Naphthalenes	U	U	U	Ū
C3-Naphthalenes	U	U	U	U
C4-Naphthalenes	U	U	U	Ū
Fluorene	U	4640	4520	U
C1-Fluorenes	U	U	U	U
C2-Fluorenes	U	U	U	U
C3- Fluorenes	U	U	U	U
Dibenzothiophene	U	U	U	U
C1-Dibenzothiophenes C2-Dibenzothiophenes	U	U	U	U
C3- Dibenzothiophenes	U U	U	U	U
Phenanthrene	U	U	U	U
C1-Phenanthrenes	Ü	4270	4240	U
C2-Phenanthrenes	Ü	U U	U	U
C3-Phenanthrenes	Ü	U	U	U
C4-Phenanthrenes	U	U	U U	U
Anthracene	Ŭ	4790	4540	U
Fluoranthene	Ü	3850	3770	Ü
Pyrene	Ü	3820	3770	Ü
C1- Pyrenes	Ü	U	U.	U
C2- Pyrenes	Ü	Ü	Ü	Ü
C3- Pyrenes	U	Ű	Û	ŭ
C4- Pyrenes	U	U	Ū	Ü
Naphthobenzothiophene	U	U	Ū	Ü
C-1 Naphthobenzothiophenes	U	U	U	Ū
C-2 Naphthobenzothiophenes	U	U	U	U
C-3 Naphthobenzothiophenes	U	U	U	U
Benzo (a) Anthracene	U	3760	3810	U
Chrysene	U	4430	4420	U
C1- Chrysenes	U	U	U	U
C2- Chrysenes	U	U	U	U
C3- Chrysenes	Ü	U	U	U
C4- Chrysenes	U	U	U	U
Benzo (b) Fluoranthene Benzo (k) Fluoranthene	U	4230	4800	U
Benzo (e) Pyrene	ປ ປ	4340	4760	U
Benzo (a) Pyrene	U	U 3500	U	U
Perylene	Ü	3590	3620	U
Indeno (1,2,3 - cd) Pyrene	Ü	U 1990	1000	U
Dibenzo (a,h) anthracene	Ü	2380	1980	U
Benzo (g,h,i) perylene	Ü	2300 1740	2320 1730	U
Total Aromatics	0.000	50800	51300	0.000
			000	0.000

% Surrogate Recovery				
Phenanthrene d-10	0	0	0	0

### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Client:

Hovensa

Project Client:

St. Croix Spill

Project Name:	St. Croix Spill							
Client ID	15279	1 BLANK	1527	'92 LCS	1527	93 LCSD	352381	0-001 PS
RCAT ID	2010	355-01	2010	355-02	2010	355-03	2010	355-04
Sample Matrix	W	ater	w	ater	w	ater	w	ater
Analytical Instrument	Mu	stang	Mu	stang	Mu	stang	Mu	stang
% Moisture		0		0		0		0
% Lipid		0		0		0		0
Sample Size	10	000	10	000	10	000	10	051
Sample Unit-Basis	1	ml	ı	ml		mi	,	nl
Units	u	g/L	u	g/L	u	g/L	u	g/L
	MDL	RQL	MDL	RQL	MDL	RQL	MDL	RQL
nC-10 Decane	0.017	1.000	0.017	1.000	0.017	1.000	0.016	0.951
nC-11 Undecane	0.012	0.952	0.013	1.000	0.013	1.000	0.012	0.951
C-12 Dodecane	0.014	0.952	0.015	1.000	0.015	1.000	0.014	0.951
C-13 Tridecane	0.011	0.952	0.011	1.000	0.011	1.000	0.011	0.951
C-14 Tetradecane	0.026	0.952	0.027	1.000	0.027	1.000	0.026	0.951
C-15 Pentadecane	0.023	0.952	0.024	1.000	0.024	1.000	0.023	0.951
C-16 Hexadecane	0.021	0.952	0.022	1.000	0.022	1.000	0.021	0.951
C-17 Heptadecane	0.046	0.952	0.048	1.000	0.048	1.000	0.046	0.951
ristane	0.044	0.952	0.046	1.000	0.046	1.000	0.044	0.951
C-18 Octadecane	0.067	0.952	0.070	1.000	0.070	1,000	0.067	0.951
Phytane	0.069	0.952	0.073	1.000	0.073	1.000	0.069	0.951
C-19 Nonadecane	0.038	0.952	0.039	1.000	0.039	1.000	0.037	0.951
C-20 Eicosane	0.039	0.952	0.041	1.000	0.041	1.000	0.039	0.951
C-21 Heneicosane	0.033	0.952	0.034	1.000	0.034	1.000	0.033	0.951
C-22 Docosane	0.066	0.952	0.070	1.000	0.070	1.000	0.066	0.951
C-23 Tricosane	0.037	0.952	0.039	1.000	0.039	1.000	0.037	0.951
C-24 Tetracosane	0.059	0.952	0.062	1.000	0.062	1.000	0.059	0.951
C-25 Pentacosane	0.186	0.952	0.195	1.000	0.195	1.000	0.185	0.951
C-26 Hexacosane	0.157	0.952	0.165	1.000	0.165	1.000	0.157	0.951
C-27 Heptacosane	0.124	0.952	0.130	1.000	0.130	1.000	0.124	0.951
C-28 Octacosane	0.199	0.952	0.208	1.000	0.208	1.000	0.198	0.951
C-29 Nonacosane	0.150	0.952	0.157	1.000	0.157	1.000	0.149	0.951
C-30 Triacontane	0.083	0.952	0.087	1.000	0.087	1.000	0.083	0.951
C-31 Hentriacontane	0.084	0.952	0.088	1.000	0.088	1.000	0.084	0.951
C-32 Dotriacontane	0.048	0.952	0.051	1.000	0.051	1.000	0.048	0.951
C-33 Tritriacontane	0.070	0.952	0.074	1.000	0.074	1.000	0.070	0.951
C-34 Tetratriacontane	0.069	0.952	0.073	1.000	0.073	1.000	0.069	0.951
C-35 Pentatriacontane	0.034	0.952	0.036	1.000	0.036	1.000	0.034	0.951

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Project Client:

Hovensa

Project Name:

St. Croix Spill

Project Name:	St. Croix Spill							
Client ID	15279	1 BLANK	1527	92 LCS	15279	93 LCSD	352381	0-001 PS
RCAT ID	2010	355-01	2010	355-02	2010	355-03	2010	355-04
Sample Matrix	w	ater	w	ater	w	ater	W.	ater
Analytical Instrument	Mu	stang	Mu	stang		stang		stang
% Moisture		0		0	ivid	=		_
						0		0
% Lipíd		0		0		0		0
Sample Size	1	000	10	000	1	000	10	051
Sample Unit-Basis	į	ml	ı	nl	i	mi	r	nl
Units		g/L		g/L		g/L		g/L
Nonbibalono	MDL	RQL 5.000	MDL	RQL	MDL	RQL	MDL	RQL
Naphthalene	0.225 0.225	5.000	0.225	5.000	0.225	5.000	0.225	5.000
C1-Naphthalenes C2-Naphthalenes	0.225	5.000 5.000	0.225 0.225	5.000	0.225	5.000	0.225	5.000
C3-Naphthalenes	0.225	5.000	0.225	5.000	0.225 0.225	5.000	0.225	5.000
C4-Naphthalenes	0.225	5.000		5.000		5.000	0.225	5.000
Fluorene	0.225	5.000	0.225	5.000	0.225	5.000	0.225	5.000
C1-Fluorenes	0.514	5.000	0.514 0.514	5.000	0.514	5.000	0.514	5.000
C2-Fluorenes	0.514	5.000	0.514	5.000 5.000	0.514	5.000	0.514	5.000
C3- Fluorenes	0.514	5.000	0.514	5.000	0.514 0.514	5.000 5.000	0.514	5.000
Dibenzothiophene	0.659	5.000	0.659	5.000	0.659	5.000	0.514	5.000
C1-Dibenzothiophenes	0.659	5.000	0.659	5.000	0.659	5.000	0.659	5.000
C2-Dibenzothiophenes	0.659	5.000	0.659	5.000	0.659	5.000	0.659 0.659	5.000
C3- Dibenzothiophenes	0.659	5.000	0.659	5.000	0.659	5.000	0.659	5.000
Phenanthrene	0.383	5.000	0.383	5.000	0.383	5.000	0.383	5.000 5.000
C1-Phenanthrenes	0.383	5.000	0.383	5.000	0.383	5.000	0.383	5.000
C2-Phenanthrenes	0.383	5.000	0.383	5.000	0.383	5.000	0.383	5.000
C3-Phenanthrenes	0.383	5.000	0.383	5.000	0.383	5.000	0.383	5.000
C4-Phenanthrenes	0.383	5.000	0.383	5.000	0.383	5.000	0.383	5.000
Anthracene	0.398	5.000	0.398	5.000	0.398	5.000	0.398	5.000
Fluoranthene	0.683	5.000	0.683	5.000	0.683	5.000	0.683	5.000
Pyrene	0.809	5.000	0.809	5.000	0.809	5.000	0.809	5.000
C1- Pyrenes	0.809	5.000	0.809	5.000	0.809	5.000	0.809	5.000
C2- Pyrenes	0.809	5.000	0.809	5.000	0.809	5.000	0.809	5.000
C3- Pyrenes	0.809	5.000	0.809	5.000	0.809	5.000	0.809	5.000
C4- Pyrenes	0.809	5.000	0.809	5.000	0.809	5.000	0.809	5.000
Naphthobenzothiophene	0.659	5.000	0.659	5.000	0.659	5.000	0.659	5.000
C-1 Naphthobenzothiophenes	0.659	5.000	0.659	5.000	0.659	5.000	0.659	5.000
C-2 Naphthobenzothiophenes	0.659	5.000	0.659	5.000	0.659	5.000	0.659	5.000
C-3 Naphthobenzothiophenes	0.659	5.000	0.659	5.000	0.659	5.000	0.659	5.000
Benzo (a) Anthracene	1.098	5.000	1.098	5.000	1.098	5.000	1.098	5.000
Chrysene	1.098	5.000	1.098	5.000	1.098	5.000	1.098	5.000
C1- Chrysenes	1.098	5.000	1.098	5.000	1.098	5.000	1.098	5.000
C2- Chrysenes	1.098	5.000	1.098	5.000	1.098	5.000	1.098	5.000
3- Chrysenes	1.098	5.000	1.098	5.000	1.098	5.000	1.098	5.000
C4- Chrysenes	1.098	5.000	1.098	5.000	1.098	5.000	1.098	5.000
lenzo (b) Fluoranthene	0.751	5.000	0.751	5.000	0.751	5.000	0.751	5.000
lenzo (k) Fluoranthene	0.706	5.000	0.706	5.000	0.706	5.000	0.706	5.000
Benzo (e) Pyrene	1.009	5.000	1.009	5.000	1.009	5.000	1.009	5.000
Benzo (a) Pyrene	0.843	5.000	0.843	5.000	0.843	5.000	0.843	5.000
Perylene	0.268	5.000	0.268	5.000	0.268	5.000	0.268	5.000
ndeno (1,2,3 - cd) Pyrene	1.960	5.000	1.960	5.000	1.960	5.000	1.960	5.000
Dibenzo (a,h) anthracene	1.711	5.000	1.711	5.000	1.711	5.000	1.711	5.000
Benzo (g,h,i) perylene	2,206	5.000	2.206	5.000	2.206	5.000	2.206	5.000

### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Client ID	3523811-001 PS	3523812-001 PS	3523813-001 PS	3523814-001 PS
RCAT ID	2010355-05	2010355-06	2010355-07	2010355-08
Sample Matrix	Water	Water	Water	Water
Analytical Instrument	Mustang	Mustang	Mustang	Mustang
% Moisture	0	0	0	0
% Lipid				
Sample Size	1050	1048	1028	1044
Sample Unit-Basis	ml	ml	ml	ml
Units	ug/L	ug/L	ug/L	ug/L
nC-10 Decane	U	U	U	U
nC-11 Undecane	U	Ü	Ü	U
nC-12 Dodecane	U	Ü	Ü	Ü
nC-13 Tridecane	U	Ü	U	Ü
nC-14 Tetradecane	U	U	Ü	U
nC-15 Pentadecane	U	U	Ú	U
nC-16 Hexadecane	U	U	Ü	U
nC-17 Heptadecane	U	0.053 J	Ü	U
Pristane	U	0.087 J	Ü	U
nC-18 Octadecane	U	U	Ü	U
Phytane	U	U	Ū	Ü
nC-19 Nonadecane	U	U	Ü	Ü
nC-20 Eicosane	U	U	Ü	Ü
nC-21 Heneicosane	U	0.037 J	Ū	U
nC-22 Docosane	U	U	U	Ü
nC-23 Tricosane	0.059 J	0.057 J	0.061 J	0.042 J
nC-24 Tetracosane	0.082 J	0.072 J	0.097 J	U
nC-25 Pentacosane	U	U	U	Ü
nC-26 Hexacosane	U	U	U	Ü
nC-27 Heptacosane	U	0.142 J	U	U
nC-28 Octacosane	U	U	U	U
nC-29 Nonacosane	U	0.263 J	U	U
nC-30 Triacontane	U	U	U	U
nC-31 Hentriacontane	U	U	Ü	U
nC-32 Dotriacontane	U	U	Ü	U
nC-33 Tritriacontane	U	U	Ü	Ü
nC-34 Tetratriacontane	U	U	Ü	U
nC-35 Pentatriacontane	U	0.034 J	U	Ŋ
Total Alkanes	0.140	0.745	0.158	0.042

Surrogate Recovery (%)				
5 Alpha Androstane	0	0	0	0

### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Client ID	3523811-001 PS	3523812-001 PS	3523813-001 PS	3523814-001 PS
RCAT ID	2010355-05	2010355-06	2010355-07	2010355-08
Sample Matrix	Water	Water	Water	
Analytical Instrument	Mustang			Water
% Moisture		Mustang	Mustang	Mustang
	0	0	0	0
% Lipid	0	0	0	0
Sample Size	1050	1048	1028	1044
Sample Unit-Basis	ml	ml	ml	ml
Units	ng/L	ng/L	ng/L	ng/L
Al-				
Naphthalene	U	U	U	U
C1-Naphthalenes	U	U	U	U
C2-Naphthalenes	U	U	U	U
C3-Naphthalenes	U	U	0.248 J	U
C4-Naphthalenes	U	U	U	U
Fluorene	U	U	U	U
C1-Fluorenes	U	U	U	U
C2-Fluorenes	U	U	U	U
C3- Fluorenes	U	U	U	U
Dibenzothiophene	U	U	U	U
C1-Dibenzothiophenes	U	U	U	U
C2-Dibenzothiophenes	U	U	U	U
C3- Dibenzothiophenes	U	U	U	U
Phenanthrene	U	U	U	U
C1-Phenanthrenes	U	U	U	Ū
C2-Phenanthrenes	U	U	U	Ū
C3-Phenanthrenes	U	U	U	Ū
C4-Phenanthrenes	U	U	U	Ū
Anthracene	U	U	U	Ū
Fluoranthene	U	U	U	Ū
Pyrene	U	U	U	Ú
C1- Pyrenes	U	U	U	Ū
C2- Pyrenes	U	U	U	Ū
C3- Pyrenes	U	U	U	Ü
C4- Pyrenes	U	U	U	Ū
Naphthobenzothiophene	U	U	U	Ū
C-1 Naphthobenzothiophenes	U	U	U	Ū
C-2 Naphthobenzothiophenes	U	U	U	Ü
C-3 Naphthobenzothiophenes	U	U	U	U
Benzo (a) Anthracene	U	U	U	U
Chrysene	U	U	U	U
C1- Chrysenes	U	U	U	U
C2- Chrysenes	U	U	U	U
C3- Chrysenes	U	U	U	U
C4- Chrysenes	U	U	U	U
Benzo (b) Fluoranthene	U	U	U	Ū
Benzo (k) Fluoranthene	U	U	U	Ū
Benzo (e) Pyrene	U	U	U	Ū
Benzo (a) Pyrene	U	U	U	Ū
Perylene	U	U	U	Ū
Indeno (1,2,3 - cd) Pyrene	U	U	U	Ū
Dibenzo (a,h) anthracene	U	U	U	Ū
Benzo (g,h,i) perylene	U	Ų	U	Ū
Total Aromatics	0.000	0.000	0.248	0.000

% Surrogate Recovery				
Phenanthrene d-10	0	0	0	0

# Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Client: Project Name: Hovensa St. Croix Spill

Project Name:	St. Croix Spill							
Client ID	352381	1-001 PS	352381	12-001 PS	352381	3-001 PS	352381	4-001 PS
RCAT ID	2010	355-05	2010	355-06	2010	355-07	2010	355-08
Sample Matrix	W	ater	W	ater	W	ater	W	ater
Analytical Instrument	Mu	stang	Mu	stang	Mu	stang	Mus	stang
% Moisture		0		0		0		0
% Lipid		0		0		0		0
Sample Size	10	050	10	048	10	028	10	)44
Sample Unit-Basis	r	nl	ı	ml	r	nl	г	nl
Units	սլ	g/L	u	g/L	uį	g/L	uį	g∕L
	MDL	RQL	MDL	RQL	MDL	RQL	MDL	RQL
nC-10 Decane	0.016	0.952	0.016	0.954	0.017	0.973	0.016	0.958
nC-11 Undecane	0.012	0.952	0.012	0.954	0.012	0.973	0.012	0.958
nC-12 Dodecane	0.014	0.952	0.014	0.954	0.014	0.973	0.014	0.958
nC-13 Tridecane	0.011	0.952	0.011	0.954	0.011	0.973	0.011	0.958
nC-14 Tetradecane	0.026	0.952	0.026	0.954	0.026	0.973	0.026	0.958
nC-15 Pentadecane	0.023	0.952	0.023	0.954	0.023	0.973	0.023	0.958
nC-16 Hexadecane	0.021	0.952	0.021	0.954	0.022	0.973	0.021	0.958
nC-17 Heptadecane	0.046	0.952	0.046	0.954	0.047	0.973	0.046	0.958
Pristane	0.044	0.952	0.044	0.954	0.045	0.973	0.044	0.958
nC-18 Octadecane	0.067	0.952	0.067	0.954	0.069	0.973	0.067	0.958
Phytane	0.069	0.952	0.069	0.954	0.071	0.973	0.070	0.958
nC-19 Nonadecane	0.038	0.952	0.038	0.954	0.038	0.973	0.038	0.958
nC-20 Eicosane	0.039	0.952	0.040	0.954	0.040	0.973	0.040	0.958
nC-21 Heneicosane	0.033	0.952	0.033	0.954	0.033	0.973	0.033	0.958
nC-22 Docosane	0.066	0.952	0.066	0.954	0.068	0.973	0.067	0.958
nC-23 Tricosane	0.037	0.952	0.037	0.954	0.038	0.973	0.037	0.958
nC-24 Tetracosane	0.059	0.952	0.059	0.954	0.060	0.973	0.059	0.958
nC-25 Pentacosane	0.186	0.952	0.186	0.954	0.189	0.973	0.187	0.958
nC-26 Hexacosane	0.157	0.952	0.157	0.954	0.160	0.973	0.158	0.958
nC-27 Heptacosane	0.124	0.952	0.124	0.954	0.127	0.973	0.125	0.958
nC-28 Octacosane	0.199	0.952	0.199	0.954	0.203	0.973	0.200	0.958
nC-29 Nonacosane	0.150	0.952	0.150	0.954	0.153	0.973	0.150	0.958
nC-30 Triacontane	0.083	0.952	0.083	0.954	0.084	0.973	0.083	0.958
nC-31 Hentriacontane	0.084	0.952	0.084	0.954	0.086	0.973	0.085	0.958
nC-32 Dotriacontane	0.048	0.952	0.048	0.954	0.049	0.973	0.048	0.958
nC-33 Tritriacontane	0.070	0.952	0.071	0.954	0.072	0.973	0.071	0.958
nC-34 Tetratriacontane	0.069	0.952	0.069	0.954	0.071	0.973	0.069	0.958
nC-35 Pentatriacontane	0.034	0.952	0.034	0.954	0.035	0.973	0.034	0.958

# Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

,	St. Croix Spin							
Client ID	35238	11-001 PS	35238	12-001 PS	35238	13-001 PS	352383	14-001 PS
RCAT ID	2010	355-05	2010	0355-06	2011	0355-07	2010	355-08
Sample Matrix	W	/ater		/ater		/ater		
Analytical Instrument		istang						ater
% Moisture	IVIC	-	IVIL	ustang	Mt	ıstang		stang
		0		0		0		0
% Lipid		0		0		0		0
Sample Size	1	050	1	.048	1	.028	1	044
Sample Unit-Basis		ml		ml		ml		ml
Units	r	ıg/L	r	ng/L		ng/L		g/L
	MDL	RQL	MDL	RQL	MDL	RQL	MDL	RQL
Naphthalene	0.225	5.000	0.225	5.000	0.225	5.000	0.225	5.000
C1-Naphthalenes	0.225	5.000	0.225	5.000	0.225	5.000	0.225	5.000
C2-Naphthalenes	0.225	5.000	0.225	5.000	0.225	5.000	0.225	5.000
C3-Naphthalenes	0.225	5.000	0.225	5.000	0.225	5.000	0.225	5.000
C4-Naphthalenes	0.225	5.000	0.225	5.000	0.225	5.000	0.225	5.000
Fluorene	0.514	5.000	0.514	5.000	0.514	5.000	0.514	5.000
C1-Fluorenes	0.514	5.000	0.514	5.000	0.514	5.000	0.514	5.000
C2-Fluorenes	0.514	5.000	0.514	5.000	0.514	5.000	0.514	5.000
C3- Fluorenes	0.514	5.000	0.514	5.000	0.514	5.000	0.514	5.000
Dibenzothiophene	0.659	5.000	0.659	5.000	0.659	5.000	0.659	5.000
C1-Dibenzothiophenes C2-Dibenzothiophenes	0.659	5.000	0.659	5.000	0.659	5.000	0.659	5.000
C3- Dibenzothiophenes	0.659	5.000	0.659	5.000	0.659	5.000	0.659	5.000
Phenanthrene	0.659 0.383	5.000	0.659	5.000	0.659	5.000	0.659	5.000
C1-Phenanthrenes	0.383	5.000 5.000	0.383	5.000	0.383	5.000	0.383	5.000
C2-Phenanthrenes	0.383	5.000	0.383 0.383	5.000	0.383	5.000	0.383	5.000
C3-Phenanthrenes	0.383	5.000	0.383	5.000	0.383	5.000	0.383	5.000
C4-Phenanthrenes	0.383	5.000	0.383	5.000 5.000	0.383 0.383	5.000	0.383	5.000
Anthracene	0.398	5.000	0.398	5.000	0.383	5.000	0.383	5.000
Fluoranthene	0.683	5.000	0.683	5.000	0.596	5.000 5.000	0.398	5.000
Pyrene	0.809	5.000	0.809	5.000	0.809	5.000	0.683 0.809	5.000
C1- Pyrenes	0.809	5.000	0.809	5.000	0.809	5.000	0.809	5.000
C2- Pyrenes	0.809	5.000	0.809	5.000	0.809	5.000	0.809	5.000 5.000
C3- Pyrenes	0.809	5.000	0.809	5.000	0.809	5.000	0.809	5.000
C4- Pyrenes	0.809	5.000	0.809	5.000	0.809	5.000	0.809	5.000
Naphthobenzothiophene	0.659	5.000	0.659	5.000	0.659	5.000	0.659	5.000
C-1 Naphthobenzothiophenes	0.659	5.000	0.659	5.000	0.659	5.000	0.659	5.000
C-2 Naphthobenzothiophenes	0.659	5.000	0.659	5.000	0.659	5.000	0.659	5.000
C-3 Naphthobenzothiophenes	0.659	5.000	0.659	5.000	0.659	5.000	0.659	5.000
Benzo (a) Anthracene	1.098	5.000	1.098	5.000	1.098	5.000	1.098	5.000
Chrysene	1.098	5.000	1.098	5.000	1.098	5.000	1.098	5.000
C1- Chrysenes	1.098	5.000	1.098	5.000	1.098	5.000	1.098	5.000
C2- Chrysenes	1.098	5.000	1.098	5.000	1.098	5.000	1.098	5.000
C3- Chrysenes C4- Chrysenes	1.098	5.000	1.098	5.000	1.098	5.000	1.098	5.000
Benzo (b) Fluoranthene	1.098	5.000	1.098	5.000	1.098	5.000	1.098	5.000
Benzo (k) Fluoranthene	0.751 0.706	5.000	0.751	5.000	0.751	5.000	0.751	5.000
Benzo (e) Pyrene	1.009	5.000	0.706	5.000	0.706	5.000	0.706	5.000
Benzo (a) Pyrene	0.843	5.000 5.000	1.009	5.000	1.009	5.000	1.009	5.000
Perylene	0.268	5.000	0.843 0.268	5.000 5.000	0.843	5.000	0.843	5.000
Indeno (1,2,3 - cd) Pyrene	1.960	5.000	1,960	5.000	0.268	5.000	0.268	5.000
Dibenzo (a,h) anthracene	1.711	5.000	1.711	5.000	1.960 1.711	5.000	1.960	5.000
Benzo (g,h,i) perylene	2.206	5.000	2.206	5.000	2.206	5.000 5.000	1.711	5.000
			2.200	0.000	2.200	3.000	2.206	5.000

### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Client ID	3523815-001 PS	3523816-001 PS	3523817-001 PS	3523818-001 PS
RCAT ID	2010355-09	2010355-10	2010355-11	2010355-12
Sample Matrix	Water	Water	Water	Water
Analytical Instrument	Mustang	Mustang	Mustang	Mustang
% Moisture	0	0	0	0
% Lipid				•
Sample Size	1052	1048	991	991
Sample Unit-Basis	ml	mí	ml	ml
Units	ug/L	ug/L	ug/L	ug/L
nC-10 Decane	U	U		
nC-11 Undecane	U	U	U	U
nC-12 Dodecane	Ü	U	U	U
nC-13 Tridecane	Ü	U	U	U
nC-14 Tetradecane	Ü	U	U	U
nC-15 Pentadecane	Ü	U	U	U
nC-16 Hexadecane	U	0.032 J	U	U
nC-17 Heptadecane	U	U.032 3	U	U
Pristane	Ü	U	U	U
nC-18 Octadecane	Ü	U	U	U
Phytane	Ü	U	V	U
nC-19 Nonadecane	Ü	Ü	U	U
nC-20 Eicosane	Ü	U	U	U
nC-21 Heneicosane	Ü	U	U	U
nC-22 Docosane	Ü	Ŭ	U	U
nC-23 Tricosane	Ü	0.039 J	U	U
nC-24 Tetracosane	U	U.333	U	U
nC-25 Pentacosane	Ü	Ü	U	U
nC-26 Hexacosane	Ú	U	U	U
nC-27 Heptacosane	U	U	U	U
nC-28 Octacosane	U	U	U	U
nC-29 Nonacosane	U	Ū	U	U
nC-30 Triacontane	U	U	Ü	U
nC-31 Hentriacontane	U	U	Ŭ	U
nC-32 Dotriacontane	U	Ü	Ŭ	U
nC-33 Tritriacontane	U	U	U	U
nC-34 Tetratriacontane	U	Ü	Ü	U
nC-35 Pentatriacontane	U	Ü	Ü	Ü
Total Alkanes	0.000	0.071	0.000	0.000

Surrogate Recovery (%)				
5 Alpha Androstane	0	o	0	0

### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Client ID	3523815-001 PS	3523816-001 PS	3523817-001 PS	3523818-001 PS
RCAT ID	2010355-09	2010355-10	2010355-11	2010355-12
Sample Matrix	Water	Water	Water	
Analytical Instrument	Mustang			Water
% Moisture	•	Mustang	Mustang	Mustang
	0	0	0	0
% Lipid	0.000	0	0	0
Sample Size	1052	1048	991	991
Sample Unit-Basis	ml	ml	mi	ml
Units	ng/L	ng/L	ng/L	ng/L
Naphthalene	U	U	U	U
C1-Naphthalenes	Ü	Ü	Ü	U
C2-Naphthalenes	Ū	Ü	Ŭ	U
C3-Naphthalenes	U	Ũ	Ü	Ü
C4-Naphthalenes	U	Ũ	ŭ	Ü
Fluorene	U	ũ	Ŭ	Ü
C1-Fluorenes	U	Ū	Ü	U
C2-Fluorenes	Ū	Ŭ	Ü	U
C3- Fluorenes	Ú	Ŭ	Ü	U
Dibenzothiophene	Ū	ŭ	Ü	Ü
C1-Dibenzothiophenes	U	Ü	Ŭ	U
C2-Dibenzothiophenes	Ū	ŭ	Ü	U
C3- Dibenzothiophenes	Ū	Ü	Ü	U
Phenanthrene	Ū	ŭ	Ü	U
C1-Phenanthrenes	Ü	ŭ	Ü	U
C2-Phenanthrenes	Ü	ŭ	Ü	
C3-Phenanthrenes	Ü	Ŭ	Ü	U
C4-Phenanthrenes	Ü	Ŭ	Ŭ	U
Anthracene	Ü	Ŭ	Ü	U
Fluoranthene	Ü	Ŭ	Ŭ	U
Pyrene	Ü	ŭ	ŭ	
C1- Pyrenes	Ü	Ü	ŭ	U
C2- Pyrenes	Ü	ŭ	Ŭ	U
C3- Pyrenes	Ü	ŭ	Ü	U
C4- Pyrenes	ŭ	Ü	Ü	U
Naphthobenzothiophene	Ū	Ü	ŭ	U
C-1 Naphthobenzothiophenes	Ū	Ü	ŭ	U
C-2 Naphthobenzothiophenes	Ū	Ü	ŭ	U
C-3 Naphthobenzothiophenes	Ü	Ü	Ü	U
Benzo (a) Anthracene	Ũ	Ü	U	U
Chrysene	Ü	Ü	U	-
C1- Chrysenes	Ü	Ü	Ú	U
C2- Chrysenes	Ü	Ü	U	U
C3- Chrysenes	Ű	Ü	Ü	U
C4- Chrysenes	Ü	ŭ	Ü	U
Benzo (b) Fluoranthene	Ü	Ü	Ü	Ų
Benzo (k) Fluoranthene	Ü	Ŭ	Ü	
Benzo (e) Pyrene	Ü	Ü	U	U
Benzo (a) Pyrene	Ü	ŭ	U	U
Perylene	Ü	Ü	U	U
Indeno (1,2,3 - cd) Pyrene	ŭ	U	U	U
Dibenzo (a,h) anthracene	Ü	U	U	U
Benzo (g,h,i) perylene	Ü	ŭ	U	U
Total Aromatics	0.000	0.000	0.000	0.000

% Surrogate Recovery				
Phenanthrene d-10	0	0	0	0

### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Client:

Hovensa

Project Name:

St. Croix Spill

roject Name.	St. Croix Spili							
Client ID	35238	15-001 PS	35238:	16-001 PS	35238:	17-001 PS	352381	18-001 PS
RCAT ID	2010	355-09	2010	355-10	2010	355-11	2010	355-12
Sample Matrix	w	ater	w	ater	w	ater		ater
Analytical Instrument	Mu	stang	Mu	stang	Mu	stang		stang
% Moisture		0		0		0		0
% Lipid		0		0		0		0
Sample Size	1	052	1	048	9	91	9	91
Sample Unit-Basis	1	ml		ml	ı	ml	r	ml
Units	U	g/L	u	g/L	u	g/L		g/L
	MDL	RQL	MDL	RQL	MDL	RQL	MDL	RQL
nC-10 Decane	0.016	0.951	0.016	0.954	0.017	1.009	0.017	1.009
nC-11 Undecane	0.012	0.963	0.012	0.954	0.013	1.009	0.013	1.009
nC-12 Dodecane	0.014	0.963	0.014	0.954	0.015	1.009	0.015	1.009
nC-13 Tridecane	0.011	0.963	0.011	0.954	0.011	1.009	0.011	1.009
nC-14 Tetradecane	0.026	0.963	0.026	0.954	0.027	1.009	0.027	1.009
nC-15 Pentadecane	0.023	0.963	0.023	0.954	0.024	1.009	0.024	1.009
nC-16 Hexadecane	0.022	0.963	0.021	0.954	0.023	1.009	0.023	1.009
nC-17 Heptadecane	0.046	0.963	0.046	0.954	0.048	1.009	0.048	1.009
Pristane	0.045	0.963	0.044	0.954	0.047	1.009	0.047	1.009
nC-18 Octadecane	0.068	0.963	0.067	0.954	0.071	1.009	0.071	1.009
Phytane	0.070	0.963	0.069	0.954	0.073	1.009	0.073	1.009
nC-19 Nonadecane	0.038	0.963	0.038	0.954	0.040	1.009	0.040	1.009
nC-20 Eicosane	0.040	0.963	0.040	0.954	0.042	1.009	0.042	1.009
nC-21 Heneicosane	0.033	0.963	0.033	0.954	0.035	1.009	0.035	1.009
C-22 Docosane	0.067	0.963	0.066	0.954	0.070	1.009	0.070	1.009
C-23 Tricosane	0.037	0.963	0.037	0.954	0.039	1.009	0.039	1.009
C-24 Tetracosane	0.059	0.963	0.059	0.954	0.062	1.009	0.062	1.009
C-25 Pentacosane	0.188	0.963	0.186	0.954	0.197	1.009	0.197	1.009
C-26 Hexacosane	0.159	0.963	0.157	0.954	0.166	1.009	0.166	1.009
C-27 Heptacosane	0.125	0.963	0.124	0.954	0.131	1.009	0.131	1.009
C-28 Octacosane	0.201	0.963	0.199	0.954	0.210	1.009	0.210	1.009
C-29 Nonacosane	0.151	0.963	0.150	0.954	0.158	1.009	0.158	1.009
C-30 Triacontane	0.084	0.963	0.083	0.954	0.088	1.009	0.088	1.009
C-31 Hentriacontane	0.085	0.963	0.084	0.954	0.089	1.009	0.089	1.009
C-32 Dotriacontane	0.049	0.963	0.048	0.954	0.051	1.009	0.051	1.009
C-33 Tritriacontane	0.071	0.963	0.071	0.954	0.075	1.009	0.075	1.009
C-34 Tetratriacontane	0.070	0.963	0.069	0.954	0.073	1.009	0.073	1.009
C-35 Pentatriacontane	0.035	0.963	0.034	0.954	0.036	1.009	0.036	1.009

### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Client ID	35238	15-001 PS	35238	16-001 PS	35238	17-001 PS	35238	18-001 PS
RCAT ID	2010	355-09	2010	355-10	2010	355-11	2010	355-12
Sample Matrix	w	/ater	\ <b>A</b>	/ater		/ater		
Analytical Instrument		istang						ater
% Moisture	IVIU	•	IVIL	stang	ML	istang		stang
		0		0		0		0
% Lipid		0		0		0		0
Sample Size	1	052	1	048	g	991	9	91
Sample Unit-Basis		ml		ml		ml		ml
Units	n	g/L	n	g/L		g/L		g/L
	MDL	RQL	MDL	RQL	MDL	RQL	MDL	RQL
Naphthalene	0.213	4.753	0.214	4.771	0.214	4.771	0.214	4.771
C1-Naphthalenes	0.213	4.753	0.214	4.771	0.214	4.771	0.214	4.771
C2-Naphthalenes	0.213	4.753	0.214	4.771	0.214	4.771	0.214	4.771
C3-Naphthalenes	0.213	4.753	0.214	4.771	0.214	4.771	0.214	4.771
C4-Naphthalenes	0.213	4.753	0.214	4.771	0.214	4.771	0.214	4.771
Fluorene	0.489	4.753	0.491	4.771	0.491	4,771	0.491	4.771
C1-Fluorenes	0.489	4.753	0.491	4.771	0.491	4.771	0.491	4.771
C2-Fluorenes	0.489	4.753	0.491	4.771	0.491	4.771	0.491	4.771
C3- Fluorenes	0.489	4.753	0.491	4.771	0.491	4.771	0.491	4.771
Dibenzothiophene	0.626	4.753	0.629	4.771	0.629	4.771	0.629	4.771
C1-Dibenzothiophenes	0.626	4.753	0.629	4.771	0.629	4.771	0.629	4.771
C2-Dibenzothiophenes	0.626	4.753	0.629	4.771	0.629	4.771	0.629	4.771
C3- Dibenzothiophenes	0.626	4.753	0.629	4.771	0.629	4.771	0.629	4.771
Phenanthrene	0.364	4.753	0.365	4.771	0.365	4.771	0.365	4.771
C1-Phenanthrenes	0.364	4.753	0.365	4.771	0.365	4.771	0.365	4.771
C2-Phenanthrenes	0.364	4.753	0.365	4.771	0.365	4.771	0.365	4.771
C3-Phenanthrenes	0.364	4.753	0.365	4.771	0.365	4.771	0.365	4.771
C4-Phenanthrenes	0.364	4.753	0.365	4.771	0.365	4.771	0.365	4.771
Anthracene	0.378	4.753	0.380	4.771	0.380	4.771	0.380	4.771
Fluoranthene	0.649	4.753	0.651	4.771	0.651	4.771	0.651	4.771
Pyrene	0.769	4.753	0.772	4.771	0.772	4.771	0.772	4.771
C1- Pyrenes	0.769	4.753	0.772	4.771	0.772	4.771	0.772	4.771
C2- Pyrenes	0.769	4.753	0.772	4.771	0.772	4.771	0.772	4.771
C3- Pyrenes	0.769	4.753	0.772	4.771	0.772	4.771	0.772	4.771
C4- Pyrenes	0.769	4.753	0.772	4.771	0.772	4.771	0.772	4.771
Naphthobenzothiophene	0.626	4.753	0.629	4.771	0.629	4.771	0.629	4.771
C-1 Naphthobenzothiophenes	0.626	4.753	0.629	4.771	0.629	4.771	0.629	4.771
C-2 Naphthobenzothiophenes	0.626	4.753	0.629	4.771	0.629	4.771	0.629	4.771
C-3 Naphthobenzothiophenes	0.626	4.753	0.629	4.771	0.629	4.771	0.629	4.771
Benzo (a) Anthracene	1.044	4.753	1.048	4.771	1.048	4.771	1.048	4.771
Chrysene	1.044	4.753	1.048	4.771	1.048	4.771	1.048	4.771
C1- Chrysenes	1.044	4.753	1.048	4.771	1.048	4.771	1.048	4.771
C2- Chrysenes	1.044	4.753	1.048	4.771	1.048	4.771	1.048	4.771
C3- Chrysenes	1.044	4.753	1.048	4.771	1.048	4.771	1.048	4.771
C4- Chrysenes	1.044	4.753	1.048	4.771	1.048	4.771	1.048	4.771
Benzo (b) Fluoranthene	0.714	4.753	0.717	4.771	0.717	4.771	0.717	4.771
Benzo (k) Fluoranthene	0.671	4.753	0.673	4.771	0.673	4.771	0.673	4.771
Benzo (e) Pyrene	0.959	4.753	0.963	4.771	0.963	4.771	0.963	4.771
Benzo (a) Pyrene	0.801	4.753	0.804	4.771	0.804	4.771	0.804	4.771
Perylene	0.255	4.753	0.256	4.771	0.256	4.771	0.256	4.771
Indeno (1,2,3 - cd) Pyrene	1.863	4.753	1.870	4.771	1.870	4.771	1.870	4.771
Dibenzo (a,h) anthracene	1.626	4.753	1.632	4.771	1.632	4.771	1.632	4.771
Benzo (g,h,i) perylene	2.097	4.753	2.105	4.771	2.105	4.771		

### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Client:

Hovensa

Project Name:

St. Croix Spill

Client ID	3523819-001 PS	3523820-001 PS	3523821-001 PS	3523822-001 PS
RCAT ID	2010355-13	2010355-14	2010355-15	2010355-16
Sample Matrix	Water	Water	Water	Water
Analytical Instrument	Mustang	Mustang	Mustang	Mustang
% Moisture	0	0	0	0
% Lipid				
Sample Size	1038	1050	1047	1038
Sample Unit-Basis	ml	ml	mi	ml
Units	ug/L	ug/L	ug/L	ug/L
nC-10 Decane	U	U	U	
nC-11 Undecane	Ü	Ü	U	U
nC-12 Dodecane	Ü	U	U	U
nC-13 Tridecane	Ü	U	U	U
nC-14 Tetradecane	Ú	Ü	U	U
nC-15 Pentadecane	Ú	U	U	U U
nC-16 Hexadecane	Ü	Ŭ	U	U
nC-17 Heptadecane	Ü	Ü	Ü	U
Pristane	Ü	Ü	Ü	U
nC-18 Octadecane	Ü	Ü	Ü	U
Phytane	Ü	0.082 J	Ü	U
nC-19 Nonadecane	Ü	U	Ü	U
nC-20 Eicosane	U	U	U	U
nC-21 Heneicosane	U	U	Ü	U
nC-22 Docosane	U	U	U	U
nC-23 Tricosane	U	0.041 J	U	U
nC-24 Tetracosane	U	U	U	Ü
nC-25 Pentacosane	U	Ü	Ü	Ü
nC-26 Hexacosane	U	Ü	U	Ü
nC-27 Heptacosane	U	0.129 J	U	Ü
nC-28 Octacosane	U	U	U	U
nC-29 Nonacosane	U	0.233 J	Ü	Ü
nC-30 Triacontane	U	0.305 J	Ü	U
nC-31 Hentriacontane	U	0.466 J	Ü	0.136 J
nC-32 Dotriacontane	U	0.298 J	Ü	U
nC-33 Tritriacontane	υ	0.243 J	Ü	U
nC-34 Tetratriacontane	υ	0.184 J	Ü	U
nC-35 Pentatriacontane	U	0.161 J	U	0.056 J
Total Alkanes	0.000	2.14	0.000	0.192

Surrogate Recovery (%)				
5 Alpha Androstane	0	0	0	0

### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Client:

Hovensa

Project Name:

St. Croix Spill

•				
Client ID	3523819-001 PS	3523820-001 PS	3523821-001 PS	3523822-001 PS
RCAT ID	2010355-13	2010355-14	2010355-15	2010255.46
Sample Matrix	Water			2010355-16
Analytical Instrument		Water	Water	Water
	Mustang	Mustang	Mustang	Mustang
% Moisture	0	0	0	0
% Lipid	0	0	0	0
Sample Size	1038	1050	1047	1038
Sample Unit-Basis	ml	ml	ml	mi
Units	ng/L	ng/L	ng/L	ng/L
Naphthalene				
C1-Naphthalenes	Ü	U	U	U
C2-Naphthalenes	U	U	U	U
C3-Naphthalenes	Ü	U	U	U
C4-Naphthalenes	U	U	U	0.247 J
Fluorene	U	U	U	U
C1-Fluorenes	U	U	U	U
C2-Fluorenes	U	U	U	U
C3- Fluorenes	U	U	U	U
Dibenzothiophene	U	U	U	U
·	U	U	U	U
C1-Dibenzothiophenes	U	U	U	U
C2-Dibenzothiophenes	U	U	U	U
C3- Dibenzothiophenes Phenanthrene	U	U	U	U
C1-Phenanthrenes	U	U	U	υ
	U	U	U	U
C2-Phenanthrenes	U	U	U	U
C3-Phenanthrenes	U	U	U	U
C4-Phenanthrenes	U	U	U	U
Anthracene	U	U	U	U
Fluoranthene	U	U	U	U
Pyrene	U	U	U	υ
C1- Pyrenes	U	U	U	υ
C2- Pyrenes	U	U	U	U
C3- Pyrenes	U	U	U	U
C4- Pyrenes	U	U	U	Ú
Naphthobenzothiophene	U	U	U	U
C-1 Naphthobenzothiophenes	U	U	U	U
C-2 Naphthobenzothiophenes	U	U	U	U
C-3 Naphthobenzothiophenes	U	U	U	U
Benzo (a) Anthracene	U	U	U	U
Chrysene	U	U	U	U
C1- Chrysenes	U	U	U	U
C2- Chrysenes	U	U	U	U
C3- Chrysenes	U	U	U	U
C4- Chrysenes	U	U	U	U
Benzo (b) Fluoranthene	U	U	U	Ü
Benzo (k) Fluoranthene	U	U	Ü	Ū
Benzo (e) Pyrene	U	U	U	Ū
Benzo (a) Pyrene	U	U	U	Ū
Perylene	U	U	Ü	Ŭ
Indeno (1,2,3 - cd) Pyrene	U	U	Ü	ŭ
Dibenzo (a,h) anthracene	U	U	Ū	ŭ
Benzo (g,h,i) perylene	U	U	U	ŭ
Total Aromatics	0.000	0.000	0.000	0.247

% Surrogate Recovery				
Phenanthrene d-10	0	0	0	0

# Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

rioject Name.	St. Croix Spili							
Client ID	35238	19-001 PS	35238	20-001 PS	35238	21-001 PS	352382	22-001 PS
RCAT ID	2010355-13		2010	2010355-14		)355-15	2010	355-16
Sample Matrix	Water		W	/ater		/ater		ater
Analytical Instrument	Mu	ustang	Mι	ıstang		istang		stang
% Moisture		0		0		0		0
% Lipid		0		0		0		0
Sample Size	1	.038	1	050	1	047		038
Sample Unit-Basis		ml		mi		ml		mi
Units	ι	ıg/L	u	ıg/L		g/L		g/L
	MDL	RQL	MDL	RQL	MDL	RQL	MDL	RQL
nC-10 Decane	0.016	0.963	0.016	0.952	0.016	0.955	0.016	0.963
nC-11 Undecane	0.012	0.963	0.012	0.952	0.012	0.955	0.012	0.963
nC-12 Dodecane	0.014	0.963	0.014	0.952	0.014	0.955	0.014	0.963
nC-13 Tridecane	0.011	0.963	0.011	0.952	0.011	0.955	0.011	0.963
nC-14 Tetradecane	0.026	0.963	0.026	0.952	0.026	0.955	0.026	0.963
nC-15 Pentadecane	0.023	0.963	0.023	0.952	0.023	0.955	0.023	0.963
nC-16 Hexadecane	0.022	0.963	0.021	0.952	0.021	0.955	0.022	0.963
nC-17 Heptadecane	0.046	0.963	0.046	0.952	0.046	0.955	0.046	0.963
Pristane	0.045	0.963	0.044	0.952	0.044	0.955	0.045	0.963
nC-18 Octadecane	0.068	0.963	0.067	0.952	0.067	0.955	0.068	0.963
Phytane	0.070	0.963	0.069	0.952	0.069	0.955	0.070	0.963
nC-19 Nonadecane	0.038	0.963	0.038	0.952	0.038	0.955	0.038	0.963
nC-20 Eicosane	0.040	0.963	0.039	0.952	0.040	0.955	0.040	0.963
nC-21 Heneicosane	0.033	0.963	0.033	0.952	0.033	0.955	0.033	0.963
nC-22 Docosane	0.067	0.963	0.066	0.952	0.066	0.955	0.067	0.963
nC-23 Tricosane	0.037	0.963	0.037	0.952	0.037	0.955	0.037	0.963
nC-24 Tetracosane	0.059	0.963	0.059	0.952	0.059	0.955	0.059	0.963
nC-25 Pentacosane	0.188	0.963	0.186	0.952	0.186	0.955	0.188	0.963
nC-26 Hexacosane	0.159	0.963	0.157	0.952	0.157	0.955	0.159	0.963
nC-27 Heptacosane	0.125	0.963	0.124	0.952	0.124	0.955	0.135	0.963
nC-28 Octacosane	0.201	0.963	0.199	0.952	0.199	0.955	0.723	0.963
nC-29 Nonacosane	0.151	0.963	0.150	0.952	0.150	0.955	0.201	0.963
nC-30 Triacontane	0.084	0.963	0.083	0.952	0.083	0.955	0.084	0.963
nC-31 Hentriacontane	0.085	0.963	0.084	0.952	0.084	0.955	0.085	0.963
nC-32 Dotriacontane	0.049	0.963	0.048	0.952	0.048	0.955	0.049	0.963
nC-33 Tritriacontane	0.071	0.963	0.070	0.952	0.071	0.955	0.049	0.963
nC-34 Tetratriacontane	0.070	0.963	0.069	0.952	0.069	0.955	0.071	0.963
nC-35 Pentatriacontane	0.035	0.963	0.034	0.952	0.034	0.955	0.070	0.963
			<del>-</del>	2.502	0.004	0.000	0.035	0.903

### Louisiana State University **Department of Environmental Sciences** Response & Chemical Assessment Team

Project Client:

Hovensa

Project Name: St. Croix Spill

Client ID	35238	19-001 PS	35238	20-001 PS	35238	21-001 PS	352382	22-001 PS
RCAT ID	2010355-13 2010355-		355-14	2010355-15		2010355-16		
Sample Matrix	W	/ater	W	Water		Water		ater
Analytical Instrument		istang		stang				
% Moisture	IVIC	0	IVIC	-	ML	ustang		stang
				0		0		0
% Lipid		0		0		0		0
Sample Size	1	038	1	050	1	.047	10	038
Sample Unit-Basis		ml		ml		ml	,	ml
Units	r	ıg/L	n	g/L		ıg/L		r., g/L
	MDL	RQL	MDL	RQL	MDL	RQL	MDL	RQL
Naphthalene	0.214	4.771	0.214	4.771	0.214	4.771	0,214	4.771
C1-Naphthalenes	0.214	4.771	0.214	4.771	0.214	4.771	0.214	4.771
C2-Naphthalenes	0.214	4.771	0.214	4.771	0.214	4.771	0.214	4.771
C3-Naphthalenes	0.214	4.771	0.214	4.771	0.214	4.771	0.214	4.771
C4-Naphthalenes	0.214	4.771	0.214	4.771	0.214	4.771	0.214	4.771
Fluorene	0.491	4.771	0.491	4.771	0.491	4.771	0.491	4.771
C1-Fluorenes	0.491	4.771	0.491	4.771	0.491	4.771	0.491	4.771
C2-Fluorenes	0.491	4.771	0.491	4.771	0.491	4.771	0.491	4,771
C3- Fluorenes	0.491	4.771	0.491	4.771	0.491	4.771	0.491	4.771
Dibenzothiophene	0.629	4.771	0.629	4.771	0.629	4.771	0.629	4.771
C1-Dibenzothiophenes	0.629	4.771	0.629	4.771	0.629	4.771	0.629	4.771
C2-Dibenzothiophenes	0.629	4.771	0.629	4.771	0.629	4.771	0.629	4.771
C3- Dibenzothiophenes	0.629	4.771	0.629	4.771	0.629	4.771	0.629	4.771
Phenanthrene	0.365	4.771	0.365	4.771	0.365	4.771	0.365	4.771
C1-Phenanthrenes	0.365	4.771	0.365	4.771	0.365	4.771	0.365	4.771
C2-Phenanthrenes	0.365	4.771	0.365	4.771	0.365	4.771	0.365	4.771
C3-Phenanthrenes	0.365	4.771	0.365	4.771	0.365	4.771	0.365	4.771
C4-Phenanthrenes	0.365	4.771	0.365	4,771	0.365	4.771	0.365	4.771
Anthracene	0.380	4.771	0.380	4.771	0.380	4.771	0.380	4.771
Fluoranthene	0.651	4.771	0.651	4.771	0.651	4.771	0.651	4.771
Pyrene	0.772	4.771	0.772	4.771	0.772	4.771	0.772	4,771
C1- Pyrenes	0.772	4.771	0.772	4.771	0.772	4.771	0.772	4.771
C2- Pyrenes	0.772	4.771	0.772	4.771	0.772	4.771	0.772	4.771
C3- Pyrenes	0.772	4.771	0.772	4.771	0.772	4.771	0.772	4.771
24- Pyrenes	0.772	4.771	0.772	4.771	0.772	4.771	0.772	4.771
laphthobenzothiophene	0.629	4.771	0.629	4.771	0.629	4.771	0.629	4.771
C-1 Naphthobenzothiophenes	0.629	4.771	0.629	4.771	0.629	4.771	0.629	4.771
C-2 Naphthobenzothiophenes	0.629	4.771	0.629	4.771	0.629	4.771	0.629	4.771
C-3 Naphthobenzothiophenes	0.629	4.771	0.629	4.771	0.629	4.771	0.629	4.771
enzo (a) Anthracene	1.048	4.771	1.048	4.771	1.048	4.771	1.048	4.771
Chrysene	1.048	4.771	1.048	4.771	1.048	4.771	1.048	4.771
C1- Chrysenes	1.048	4.771	1.048	4.771	1.048	4.771	1.048	4.771
2- Chrysenes	1.048	4.771	1.048	4.771	1.048	4.771	1.048	4.771
C3- Chrysenes	1.048	4.771	1.048	4.771	1.048	4.771	1.048	4.771
4- Chrysenes	1.048	4.771	1.048	4.771	1.048	4.771	1.048	4.771
enzo (b) Fluoranthene	0.717	4.771	0.717	4.771	0.717	4.771	0.717	4.771
enzo (k) Fluoranthene	0.673	4.771	0.673	4.771	0.673	4.771	0.673	4.771
enzo (e) Pyrene	0.963	4.771	0.963	4.771	0.963	4.771	0.963	4.771
enzo (a) Pyrene	0.804	4.771	0.804	4.771	0.804	4.771	0.804	4.771
erylene	0.256	4.771	0.256	4.771	0.256	4.771	0.256	4.771
ndeno (1,2,3 - cd) Pyrene	1.870	4.771	1.870	4.771	1.870	4.771	1.870	4.771
Dibenzo (a,h) anthracene	1.632	4.771	1.632	4.771	1.632	4.771	1.632	4.771
Benzo (g,h,i) perylene	2.105	4.771	2.105	4.771	2.105	4.771	2.105	4.771

# Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Client:	Hovensa		
Project Name:	St. Croix Spill		
Client ID	3523822-002 PS	3523823-001 PS	
RCAT ID	2010355-17	2010355-18	
Sample Matrix	Water	Water	
Analytical Instrument	Mustang	Mustang	
% Moisture	0	0	
% Lipid			
Sample Size	1052	1040	
Sample Unit-Basis	m!	ml	
Units	ug/L	ug/L	
nC-10 Decane			
nC-11 Undecane	U	U	
nC-12 Dodecane	U	U	
nC-13 Tridecane	U	U	
nC-14 Tetradecane	U	U	
nC-15 Pentadecane	U	U	
nC-16 Hexadecane	U	U	
nC-17 Heptadecane	U	U	
Pristane	U	U	
nC-18 Octadecane	U	U	
Phytane	U	U	
nC-19 Nonadecane	U	U	
nC-20 Eicosane	U	U	
nC-21 Heneicosane	U	U	
nC-22 Docosane	U U	U	
nC-23 Tricosane	=	U	
nC-24 Tetracosane	U	U	
nC-25 Pentacosane	U	U	
nC-26 Hexacosane	U	V	
nC-27 Heptacosane	U	U	
nC-28 Octacosane	U	U	
nC-29 Nonacosane	U	U	
nC-30 Triacontane		0.169 J	
nC-31 Hentriacontane	U U	U	
nC-32 Dotriacontane		U	
nC-33 Tritriacontane	U U	U	
nC-34 Tetratriacontane	U	U	
nC-35 Pentatriacontane	U	U	
Total Alkanes	0.000	∪ <b>0.169</b>	
, oter / marics	0.000	บ.าธุ์	

Surrogate Recovery (%)		
5 Alpha Androstane	0	0

### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Client:	Hovensa		
Project Name:	St. Croix Spill		
Client ID	3523822-002 PS	3523823-001 PS	
RCAT ID	2010355-17	2010355-18	
Sample Matrix	Water	Water	
Analytical Instrument	Mustang	Mustang	
% Moisture	0	0	
% Lipid	0	0	
Sample Size	1052		
Sample Unit-Basis		1040	
Units	ml ng/l	ml 	
Office	ng/L	ng/L	
Naphthalene	U	U	
C1-Naphthalenes	Ü	Ü	
C2-Naphthalenes	Ū	Ŭ	
C3-Naphthalenes	U	Ü	
C4-Naphthalenes	Ü	Ü	
Fluorene	U	Ŭ	
C1-Fluorenes	U	Ü	
C2-Fluorenes	U	Ü	
C3- Fluorenes	U	U	
Dibenzothiophen <del>e</del>	U	U	
C1-Dibenzothiophenes	U	U	
C2-Dibenzothiophenes	U	U	
C3- Dibenzothiophenes	U	U	
Phenanthrene	U	U	
C1-Phenanthrenes	U	U	
C2-Phenanthrenes	U	U	
C3-Phenanthrenes	U	U	
C4-Phenanthrenes	U	U	
Anthracene	U	U	
uoranthene	U	U	
Pyrene	U	U	
C1- Pyrenes	U	U	
C2- Pyrenes	U	U	
C3- Pyrenes	U	Ų	
C4- Pyrenes	U	U	
Naphthobenzothiophene	Ŭ	U	
C-1 Naphthobenzothiophenes	U	U	
C-2 Naphthobenzothiophenes C-3 Naphthobenzothiophenes	U	Ü	
3-3 Naphthobenzothiophenes Benzo (a) Anthracene	U	U	
Senzo (a) Anthracene Chrysene	U	U	
Chrysenes	U U	U	
C2- Chrysenes	U	υ	
C3- Chrysenes	U U	U	
C4- Chrysenes	U	U	
Benzo (b) Fluoranthene	U	U	
lenzo (k) Fluoranthene	U	U	
Senzo (e) Pyrene	U	U U	
Senzo (a) Pyrene	Ü	U	
Perylene	Ü	U	
ndeno (1,2,3 - cd) Pyrene	Ü	U	
Dibenzo (a,h) anthracene	Ŭ	U	
Benzo (g,h,i) perylene	Ü	Ü	
Total Aromatics	0.000	0.000	

% Surrogate Recovery		
Phenanthrene d-10	0	0

### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Client: Project Name:

roject Name.					
Client ID	352382	22-002 PS	352382	3-001 PS	
RCATID	2010	355-17	2010	355-18	
Sample Matrix		ater		ater	
Analytical Instrument		stang		stang	
% Moisture		0		0	
% Lipid		0		0	
Sample Síze		052		040	
Sample Unit-Basis		ni		nl	
Units		g/L		g/L	
	MDL	RQL	MDL	RQL	
nC-10 Decane	0.016	0.951	0.016	0.962	
nC-11 Undecane	0.012	0.951	0.012	0.962	
nC-12 Dodecane	0.014	0.951	0.014	0.962	
nC-13 Tridecane	0.011	0.951	0.011	0.962	
nC-14 Tetradecane	0.026	0.951	0.026	0.962	
nC-15 Pentadecane	0.023	0.951	0.023	0.962	
nC-16 Hexadecane	0.021	0.951	0.022	0.962	
nC-17 Heptadecane	0.046	0.951	0.046	0.962	
Pristane	0.044	0.951	0.045	0.962	
nC-18 Octadecane	0.067	0.951	0.068	0.962	
Phytane	0.069	0.951	0.070	0.962	
nC-19 Nonadecane	0.037	0.951	0.038	0.962	
nC-20 Eicosane	0.039	0.951	0.040	0.962	
nC-21 Heneicosane	0.033	0.951	0.033	0.962	
nC-22 Docosane	0.066	0.951	0.067	0.962	
nC-23 Tricosane	0.037	0.951	0.037	0.962	
nC-24 Tetracosane	0.059	0.951	0.059	0.962	
nC-25 Pentacosane	0.185	0.951	0.187	0.962	
nC-26 Hexacosane	0.157	0.951	0.158	0.962	
nC-27 Heptacosane	0.124	0.951	0.125	0.962	
nC-28 Octacosane	0.198	0.951	0.200	0.962	
nC-29 Nonacosane	0.149	0.951	0.151	0.962	
nC-30 Triacontane	0.083	0.951	0.083	0.962	
nC-31 Hentriacontane	0.084	0.951	0.085	0.962	
nC-32 Dotriacontane	0.048	0.951	0.049	0.962	
nC-33 Tritriacontane	0.070	0.951	0.071	0.962	
nC-34 Tetratriacontane	0.069	0.951	0.070	0.962	
nC-35 Pentatriacontane	0.034	0.951	0.034	0.962	

# Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Client: Project Name:

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Client ID	352382	22-002 PS	352382	23-001 PS
RCAT ID	2010	355-17	2010	255.40
				355-18
Sample Matrix		ater	W	ater
Analytical Instrument	Mu	stang	Mu	stang
% Moisture		0		0
% Lipid		0		0
Sample Size	10	052	10	040
Sample Unit-Basis	r	nl		ml
Units				
0.000	MDL	g/L RQL	MDL n	g/L
Naphthalene	0.213	4.753	0.213	RQL 4.753
C1-Naphthalenes	0.213	4.753	0.213	4.753 4.753
C2-Naphthalenes	0.213	4.753	0.213	4.753
C3-Naphthalenes	0.213	4.753	0.213	4.753
C4-Naphthalenes	0.213	4.753	0.213	4.753
Fluorene	0.489	4.753	0.489	4.753
C1-Fluorenes	0.489	4.753	0.489	4.753
C2-Fluorenes	0.489	4.753	0.489	4.753
C3- Fluorenes	0.489	4.753	0.489	4.753
Dibenzothiophene	0.626	4.753	0.626	4.753
C1-Dibenzothiophenes	0.626	4.753	0.626	4.753
C2-Dibenzothiophenes	0.626	4.753	0.626	4.753
C3- Dibenzothiophenes	0.626	4.753	0.626	4.753
Phenanthrene	0.364	4.753	0.364	4.753
C1-Phenanthrenes	0.364	4.753	0.364	4.753
C2-Phenanthrenes	0.364	4.753	0.364	4.753
C3-Phenanthrenes	0.364	4.753	0.364	4.753
C4-Phenanthrenes	0.364	4.753	0.364	4.753
Anthracene Fluoranthene	0.378	4.753	0.378	4.753
Pyrene	0.649	4.753	0.649	4.753
C1- Pyrenes	0.769 0.769	4.753 4.753	0.769	4.753
C2- Pyrenes	0.769		0.769	4.753
C3- Pyrenes	0.769	4.753 4.753	0.769	4.753
C4- Pyrenes	0.769	4.753 4.753	0.769 0.769	4.753 4.753
Naphthobenzothiophene	0.626	4.753	0.626	4.753 4.753
C-1 Naphthobenzothiophenes	0.626	4.753	0.626	4.753 4.753
C-2 Naphthobenzothiophenes	0.626	4.753	0.626	4.753
C-3 Naphthobenzothiophenes	0.626	4.753	0.626	4.753
Benzo (a) Anthracene	1.044	4.753	1.044	4.753
Chrysene	1.044	4.753	1.044	4.753
C1- Chrysenes	1.044	4.753	1.044	4.753
C2- Chrysenes	1.044	4.753	1.044	4.753
C3- Chrysenes	1.044	4.753	1.044	4.753
C4- Chrysenes	1.044	4.753	1.044	4.753
Benzo (b) Fluoranthene	0.714	4.753	0.714	4.753
Benzo (k) Fluoranthene	0.671	4.753	0.671	4.753
Benzo (e) Pyrene	0.959	4.753	0.959	4.753
Benzo (a) Pyrene	0.801	4.753	0.801	4.753
Perylene	0.255	4.753	0.255	4.753
Indeno (1,2,3 - cd) Pyrene	1.863	4.753	1.863	4.753
Dibenzo (a,h) anthracene	1.626	4.753	1.626	4.753
Benzo (g,h,i) perylene	2.097	4.753	2.097	4.753

### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Client: Project Name: Hovensa St. Croix Spill

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Client ID	3523824-001 PS	3523825-001 PS	3523826-001 PS	3523827-001 PS
RCAT ID	2010355-19	2010355-20	2010355-21	2010355-22
Sample Matrix	Water	Water	Water	Water
Analytical Instrument	Mustang	Mustang	Mustang	Mustang
% Moisture	0	0	0	0
% Lipid				
Sample Size	1046	1050	1049	943
Sample Unit-Basis	ml	ml	ml	ml
Units	ug/L	ug/L	ug/L	ug/L
nC-10 Decane				
	U	U	U	U
nC-11 Undecane nC-12 Dodecane	0.023 J	U	U	U
nC-13 Tridecane	U	U	U	U
nC-14 Tetradecane	U	U	U	U
nC-15 Pentadecane	U	U	U	U
nC-16 Hexadecane	U	0.030 J	U	U
nC-17 Heptadecane	0.037 J	0.032 J	0.028 J	U
Pristane	U U	U	U	U
nC-18 Octadecane		U	U	U
Phytane	U	U	U	U
nC-19 Nonadecane	U U	U	U	U
nC-20 Eicosane	U	U	U	U
nC-21 Heneicosane	Ü	U	U	U
nC-22 Docosane	Ü	U	U	U
nC-23 Tricosane	U	0.050	U	U
nC-24 Tetracosane	Ü	0.056 J	U	U
nC-25 Pentacosane	Ü	0.109 J 0.334 J	U	U
nC-26 Hexacosane	Ü	0.302 J	U	U
nC-27 Heptacosane	U	0.263 J	U	U
nC-28 Octacosane	U	0.263 J 0.365 J	U	U
nC-29 Nonacosane	Ü	0.351 J	U	U
nC-30 Triacontane	U	0.107 J	U	U
nC-31 Hentriacontane	Ü	0.505 J	U U	U
nC-32 Dotriacontane	U	0.303 J U	U	U
nC-33 Tritriacontane	U	0.154 J	U	U
nC-34 Tetratriacontane	Ü	U.134 3	U	U
nC-35 Pentatriacontane	Ü	Ü	U	U
Total Alkanes	0.059	2.61	0.028	0.000
			7.727	0.000

Surrogate Recovery (%)				
5 Alpha Androstane	0	0	0	0

### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Client:	Hovensa
Project Name:	St. Croix Spill

Client ID	3523824-001 PS	3523825-001 PS	3523826-001 PS	3523827-001 PS
RCAT ID	2010355-19	2010355-20	2010355-21	2010355-22
Sample Matrix	Water	Water	Water	Water
Analytical Instrument	Mustang	Mustang		
% Moisture		•	Mustang	Mustang
	0	0	0	0
% Lipid	0.000	0	0	0
Sample Size	1046	1050	1049	943
Sample Unit-Basis	ml	ml	ml	ml
Units	ng/L	ng/L	ng/L	ng/L
Naphthalene	U	U	Ü	1.18
C1-Naphthalenes	Ü	Ü	Ŭ	1.18
C2-Naphthalenes	Ü	Ü	Ŭ	Ü
C3-Naphthalenes	Ū	Ũ	Ü	Ü
C4-Naphthalenes	Ü	Ũ	Ü	Ü
Fluorene	Ũ	Ü	Ü	Ü
C1-Fluorenes	ŭ	Ü	Ŭ	Ŭ
C2-Fluorenes	Ū	Ü	Ü	Ŭ
C3- Fluorenes	Ŭ	Ü	ŭ	Ü
Dibenzothiophene	Ü	Ü	ŭ	Ü
C1-Dibenzothiophenes	Ü	Ü	Ŭ	Ü
C2-Dibenzothiophenes	Ű	Ü	Ü	U
C3- Dibenzothiophenes	ŭ	Ü	Ü	U
Phenanthrene	Ű	3.64 J	U	U
C1-Phenanthrenes	Ü	19.4	Ü	U
C2-Phenanthrenes	ŭ	22.4	Ü	=
C3-Phenanthrenes	Ü	24.8	U	Ü
C4-Phenanthrenes	Ü	24.0 U	U	U
Anthracene	Ü	4.19 J	U	U
Fluoranthene	Ü	4.19 J 3.42 J	_	U
Pyrene	Ü	3.42 J 4.85	U U	U
C1- Pyrenes	Ü	4.65 U	U	Ü
C2- Pyrenes	Ü	-	=	U
C3- Pyrenes	U	12.6	U	U
C4- Pyrenes	Ü	33.9 U	U	Ü
Naphthobenzothiophene	Ü	U	Ų	Ü
C-1 Naphthobenzothiophenes	Ü		U	U
C-2 Naphthobenzothiophenes	Ü	28.0 22.6	U U	U
C-3 Naphthobenzothiophenes	Ü	22.6 U		U
Benzo (a) Anthracene	Ü	31.9	U	Ü
Chrysene	Ü	17.8	U	U
C1- Chrysenes	υ		U	U
C2- Chrysenes	Ü	138	U	U
C3- Chrysenes	Ü	188	U	U
•		Ü	U	U
C4- Chrysenes Benzo (b) Fluoranthene	U	U	U	U
Benzo (k) Fluoranthene	U	U U	U	U
Benzo (e) Pyrene	_	~	U	U
Benzo (a) Pyrene Benzo (a) Pyrene	U	37.2	U	U
Perviene	U	22.6	U	U
*	0.413 J	19.3	U	0.423 J
Indeno (1,2,3 - cd) Pyrene	U	Ü	U	U
Dibenzo (a,h) anthracene	U	U	U	U
Benzo (g,h,i) perylene  Total Aromatics	U 443	U	U	U
rotal Aromatics	0.413	635	0.000	1.60

% Surrogate Recovery				
Phenanthrene d-10	0	0	0	0

### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

•	st. Croix spili							
Client ID	35238.	24-001 PS	352382	25-001 PS	352382	26-001 PS	352382	7-001 PS
RCAT ID	2010	355-19	2010	355-20	2010	355-21	2010	355-22
Sample Matrix	W	ater	w	ater	w	ater	w.	ater
Analytical Instrument	Mu	stang	Mu	stang	Mu	stang		stang
% Moisture		0		0		0		0
% Lipid		0		0		0		0
Sample Size	1	046	10	050	1	049	9	43
Sample Unit-Basis		ml		ni	1	ml	r	nl
Units	u	g/L	u	g/L	u	g/L	uį	g/L
	MDL	RQL	MDL	RQL	MDL	RQL	MDL	RQL
nC-10 Decane	0.016	0.956	0.016	0.952	0.016	0.953	0.018	1.060
nC-11 Undecane	0.012	0.954	0.012	0.952	0.012	0.953	0.014	1.060
nC-12 Dodecane	0.014	0.954	0.014	0.952	0.014	0.953	0.016	1.060
nC-13 Tridecane	0.011	0.954	0.011	0.952	0.011	0.953	0.012	1.060
nC-14 Tetradecane	0.026	0.954	0.026	0.952	0.026	0.953	0.029	1.060
nC-15 Pentadecane	0.023	0.954	0.023	0.952	0.023	0.953	0.025	1.060
nC-16 Hexadecane	0.021	0.954	0.021	0.952	0.021	0.953	0.024	1.060
nC-17 Heptadecane	0.046	0.954	0.046	0.952	0.046	0.953	0.051	1.060
Pristane	0.044	0.954	0.044	0.952	0.044	0.953	0.049	1.060
nC-18 Octadecane	0.067	0.954	0.067	0.952	0.067	0.953	0.075	1.060
Phytane	0.069	0.954	0.069	0.952	0.069	0.953	0.077	1.060
nC-19 Nonadecane	0.038	0.954	0.038	0.952	0.038	0.953	0.042	1.060
nC-20 Eicosane	0.040	0.954	0.039	0.952	0.040	0.953	0.044	1.060
nC-21 Heneicosane	0.033	0.954	0.033	0.952	0.033	0.953	0.036	1.060
nC-22 Docosane	0.066	0.954	0.066	0.952	0.066	0.953	0.074	1.060
nC-23 Tricosane	0.037	0.954	0.037	0.952	0.037	0.953	0.041	1.060
nC-24 Tetracosane	0.059	0.954	0.059	0.952	0.059	0.953	0.065	1.060
nC-25 Pentacosane	0.186	0.954	0.186	0.952	0.186	0.953	0.207	1.060
nC-26 Hexacosane	0.157	0.954	0.157	0.952	0.157	0.953	0.175	1.060
nC-27 Heptacosane	0.124	0.954	0.124	0.952	0.124	0.953	0.138	1.060
nC-28 Octacosane	0.199	0.954	0.199	0.952	0.199	0.953	0.221	1.060
nC-29 Nonacosane	0.150	0.954	0.150	0.952	0.150	0.953	0.166	1.060
nC-30 Triacontane	0.083	0.954	0.083	0.952	0.083	0.953	0.092	1.060
nC-31 Hentriacontane	0.084	0.954	0.084	0.952	0.084	0.953	0.094	1.060
nC-32 Dotriacontane	0.048	0.954	0.048	0.952	0.048	0.953	0.054	1.060
nC-33 Tritriacontane	0.071	0.954	0.070	0.952	0.070	0.953	0.078	1.060
nC-34 Tetratriacontane	0.069	0.954	0.069	0.952	0.069	0.953	0.077	1.060
nC-35 Pentatriacontane	0.034	0.954	0.034	0.952				1,000

### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Benzo (e) Pyrene     0.965     4.780     0.961     4.762     0.961     4.762     0.961     4.762       Benzo (a) Pyrene     0.806     4.780     0.803     4.762     0.803     4.762     0.803     4.762       Perylene     0.256     4.780     0.255     4.762     0.255     4.762     0.255     4.762       Indeno (1,2,3 - cd) Pyrene     1.874     4.780     1.866     4.762     1.866     4.762     1.866     4.762		,							
Sample Matrix   Water   Wate	Client ID	35238	24-001 PS	35238	25-001 PS	35238	26-001 PS	352382	27-001 PS
Mustange	RCAT ID	2010	355-19	2010	355-20	2010	0355-21	2010	355-22
Mustange	Sample Matrix	W	ater ater	W	/ater	W	/ater	w	ater
Mositure         0	Analytical Instrument	Mu	stang	Mil	istang				
Supple   1046			-		_		-	Wid	-
Sample Size									
Sample Unit Basis	·								0
Naphthalene	·			1	050	1	.049	g	43
Molt			ml		mi		ml	1	ml
Naphthalene	Units			n	g/L	n	ng/L	n	g/L
C1-Naphthalenes 0.215 4.780 0.214 4.762 0.490 4.762 0.	N. 100 A						RQL	MDL	RQL
C2-Naphthalenes 0.215 4.780 0.214 4.762 0.490 4.762 0.200 0.	•								4.762
C3-Naphthalenes 0.215 4.780 0.214 4.762 0.214 4.762 0.214 4.762 0.214 4.762 1.462 1.	•								
C4-Naphthalenes 0 215									
Fluorene	•								
C1-Fluorenes 0.492 4.780 0.490 4.762 0.490 4.762 0.490 4.762 0.490 4.762 C2-Fluorenes 0.492 4.780 0.490 4.762 0.490 4.762 0.490 4.762 0.490 4.762 C3-Fluorenes 0.492 4.780 0.490 4.762 0.490 4.762 0.490 4.762 0.490 4.762 0.490 4.762 0.490 4.762 0.490 4.762 0.490 4.762 0.490 4.762 0.490 4.762 0.490 4.762 0.490 4.762 0.627 4.762 0.6									
C2-Fluorenes 0.492 4.780 0.490 4.762 0.627 4.762 0.627		_							
C3- Fluorenes 0.492 4.780 0.490 4.762 0.490 4.762 0.490 4.762 0.490 4.762 0.490 4.762 0.597 4.762 0.627 4.762 0.771 4.762 0.77									
Dibenzothiophene         0.630         4.780         0.827         4.762         0.627         4.762           C1-Dibenzothiophenes         0.630         4.780         0.627         4.762         0.627         4.762         0.627         4.762           C2-Dibenzothiophenes         0.630         4.780         0.627         4.762         0.627         4.762           C3-Dibenzothiophenes         0.630         4.780         0.627         4.762         0.627         4.762           C3-Dibenzothiophenes         0.630         4.780         0.365         4.762         0.627         4.762         0.627         4.762           Phenanthrene         0.366         4.780         0.365         4.762         0.365         4.762         0.365         4.762         0.365         4.762         0.365         4.762         0.365         4.762         0.365         4.762         0.365         4.762         0.365         4.762         0.365         4.762         0.365         4.762         0.365         4.762         0.365         4.762         0.365         4.762         0.365         4.762         0.365         4.762         0.365         4.762         0.365         4.762         0.365         4.762         0.365									
C1-Dibenzothiophenes 0,830 4,780 0,627 4,762 0,627 4,762 0,627 4,762 C2-Dibenzothiophenes 0,630 4,780 0,627 4,762 0,771 4,762									
C2-Dibenzothiophenes 0.830 4,780 0.627 4,762 0.627 4,762 0.627 4,762 C3-Dibenzothiophenes 0.630 4,780 0.627 4,762 0.771 4,762	•								
C3- Dibenzothlophenes         0.630         4.780         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.365         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379<	· ·								
Phenanthrene         0.366         4.780         0.365         4.762         0.365         4.762         0.365         4.762           C1-Phenanthrenes         0.366         4.780         0.365         4.762         0.365         4.762           C2-Phenanthrenes         0.366         4.780         0.365         4.762         0.365         4.762           C3-Phenanthrenes         0.366         4.780         0.365         4.762         0.365         4.762           C4-Phenanthrenes         0.366         4.780         0.365         4.762         0.365         4.762           C4-Phenanthrenes         0.366         4.780         0.365         4.762         0.365         4.762           Anthracene         0.381         4.780         0.379         4.762         0.365         4.762           Fluoranthene         0.653         4.780         0.650         4.762         0.771         4.762           Pyrene         0.774         4.780         0.771         4.762         0.771         4.762         0.771         4.762           C1- Pyrenes         0.774         4.780         0.771         4.762         0.771         4.762         0.771         4.762           C2-	C3- Dibenzothiophenes								
C1-Phenanthrenes	Phenanthrene	0.366	4.780						
C2-Phenanthrenes	C1-Phenanthrenes	0.366	4.780						
C3-Phenanthrenes 0,366 4,780 0,365 4,762 0,365 4,762 0,365 4,762 0,365 4,762 C4-Phenanthrenes 0,366 4,780 0,365 4,762 0,365 4,762 0,365 4,762 0,365 4,762 0,365 4,762 0,365 4,762 0,365 4,762 0,365 4,762 0,365 4,762 0,365 4,762 0,379 4,762 0,371 4,762 0,771 4,762 0,627 4,	C2-Phenanthrenes	0.366	4.780	0.365					
C4-Phenanthrenes         0.366         4.780         0.365         4.762         0.365         4.762         0.389         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.650         4.762         0.650         4.762         0.650         4.762         0.650         4.762         0.650         4.762         0.771         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627	C3-Phenanthrenes	0.366	4.780	0.365					
Anthracene 0.381 4.780 0.379 4.762 0.379 4.762 0.379 4.762 0.379 4.762 1.046 1		0.366	4.780	0.365	4.762	0.365	4.762		
Fluoranthene 0.653 4.780 0.650 4.762 0.650 4.762 0.650 4.762 0.771 4.762 0.627		0.381	4.780	0.379	4.762	0.379	4.762	0.379	
C1- Pyrenes 0.774 4.780 0.771 4.762 0.771 4.762 0.771 4.762 0.771 4.762 C2- Pyrenes 0.774 4.780 0.771 4.762 0.771 4.762 0.771 4.762 0.771 4.762 C3- Pyrenes 0.774 4.780 0.771 4.762 0.627 4.762 0.627 0.027					4.762	0.650	4.762	0.650	
C2- Pyrenes 0.774 4.780 0.771 4.762 0.771 4.762 0.771 4.762 C3- Pyrenes 0.774 4.780 0.771 4.762 0.771 4.762 0.771 4.762 0.771 4.762 C4- Pyrenes 0.774 4.780 0.771 4.762 0.771 4.762 0.771 4.762 0.771 4.762 0.771 4.762 0.771 4.762 0.771 4.762 0.771 4.762 0.771 4.762 0.771 4.762 0.771 4.762 0.771 4.762 0.771 4.762 0.771 4.762 0.771 4.762 0.771 4.762 0.771 4.762 0.771 4.762 0.771 4.762 0.627 0.627					4.762	0.771	4.762	0.771	4.762
C3- Pyrenes 0.774 4.780 0.771 4.762 0.771 4.762 0.771 4.762 C4-Pyrenes 0.774 4.780 0.771 4.762 0.771 4.762 0.771 4.762 0.771 4.762 0.771 4.762 0.771 4.762 0.771 4.762 0.771 4.762 0.771 4.762 0.771 4.762 0.627 0.762 0	,					0.771	4.762	0.771	4.762
C4- Pyrenes         0.774         4.780         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.627							4.762	0.771	4.762
Naphthobenzothiophene 0.630 4.780 0.627 4.762 0.762 0.									4.762
C-1 Naphthobenzothiophenes 0.630 4.780 0.627 4.762 0.627 4.762 0.627 4.762 C-2 Naphthobenzothiophenes 0.630 4.780 0.627 4.762 0.627 4.762 0.627 4.762 C-3 Naphthobenzothiophenes 0.630 4.780 0.627 4.762 0.627 4.762 0.627 4.762 C-3 Naphthobenzothiophenes 0.630 4.780 0.627 4.762 0.627 0.046 4.762 0.762	*								
C-2 Naphthobenzothiophenes 0.630 4.780 0.627 4.762 0.627 4.762 0.627 4.762 C-3 Naphthobenzothiophenes 0.630 4.780 0.627 4.762 0.627 4.762 0.627 4.762 0.627 4.762 Denzo (a) Anthracene 1.050 4.780 1.046 4.762 1.046 4.762 1.046 4.762 1.046 4.762 C-1 Chrysenes 1.050 4.780 1.046 4.762 1.046 4.762 1.046 4.762 1.046 4.762 1.046 4.762 C-2 Chrysenes 1.050 4.780 1.046 4.762 1.046 4.762 1.046 4.762 1.046 4.762 C-2 Chrysenes 1.050 4.780 1.046 4.762 1.046 4.762 1.046 4.762 1.046 4.762 C-2 Chrysenes 1.050 4.780 1.046 4.762 1.046 4.762 1.046 4.762 1.046 4.762 C-2 Chrysenes 1.050 4.780 1.046 4.762 1.046 4.762 1.046 4.762 1.046 4.762 1.046 4.762 C-2 Chrysenes 1.050 4.780 1.046 4.762 1.0									_
C-3 Naphthobenzothiophenes 0.630 4.780 0.627 4.762 0.627 0.6	•				_				
Benzo (a) Anthracene         1.050         4.780         1.046         4.762         1.046 </td <td>•</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	•								
Chrysene 1.050 4.780 1.046 4.762 1.046 4.762 1.046 4.762 1.046 4.762 C1- Chrysenes 1.050 4.780 1.046 4.762 1.046 4.762 1.046 4.762 C2- Chrysenes 1.050 4.780 1.046 4.762 1.046 4.762 1.046 4.762 C3- Chrysenes 1.050 4.780 1.046 4.762 1.046 4.762 1.046 4.762 1.046 4.762 C4- Chrysenes 1.050 4.780 1.046 4.762 1								_	
C1- Chrysenes 1.050 4.780 1.046 4.762 1.046 4.762 1.046 4.762 C2- Chrysenes 1.050 4.780 1.046 4.762 1.046 4.762 1.046 4.762 C3- Chrysenes 1.050 4.780 1.046 4.762 1.046 4.762 1.046 4.762 1.046 4.762 C4- Chrysenes 1.050 4.780 1.046 4.762 1.046 4.76	. ,								
C2- Chrysenes 1.050 4.780 1.046 4.762 1.046 4.762 1.046 4.762 C3- Chrysenes 1.050 4.780 1.046 4.762 1.046 4.762 1.046 4.762 C3- Chrysenes 1.050 4.780 1.046 4.762 1.046 4.762 1.046 4.762 1.046 4.762 E6nzo (b) Fluoranthene 0.718 4.780 0.715 4.762 0.715 4.762 0.715 4.762 E6nzo (k) Fluoranthene 0.675 4.780 0.672 4.762 0.672 4.762 0.672 4.762 0.672 4.762 E6nzo (e) Pyrene 0.965 4.780 0.961 4.762 0.961 4.762 0.961 4.762 E6nzo (a) Pyrene 0.806 4.780 0.803 4.762 0.803 4.762 0.803 4.762 E6nzo (a) Pyrene 0.256 4.780 0.255 4.762	•								
C3- Chrysenes 1.050 4.780 1.046 4.762 1.046 4.762 1.046 4.762 1.046 4.762 C4- Chrysenes 1.050 4.780 1.046 4.762 1.046 4.762 1.046 4.762 1.046 4.762 E6DED (b) Fluoranthene 0.718 4.780 0.715 4.762 0.715 4.762 0.715 4.762 E6DED (c) Fluoranthene 0.675 4.780 0.672 4.762 0.672 4.762 0.672 4.762 E6DED (e) Pyrene 0.965 4.780 0.961 4.762 0.961 4.762 0.961 4.762 E6DED (e) Pyrene 0.806 4.780 0.803 4.762 0.803 4.762 0.803 4.762 E6DED (e) E7Prine 0.256 4.780 0.255 4.762	•								
C4- Chrysenes 1.050 4.780 1.046 4.762 1.046 4.762 1.046 4.762 Benzo (b) Fluoranthene 0.718 4.780 0.715 4.762 0.715 4.762 0.715 4.762 Benzo (k) Fluoranthene 0.675 4.780 0.672 4.762 0.672 4.762 0.672 4.762 Benzo (e) Pyrene 0.965 4.780 0.961 4.762 0.961 4.762 0.961 4.762 Benzo (a) Pyrene 0.806 4.780 0.803 4.762 0.803 4.762 0.803 4.762 Perylene 0.256 4.780 0.255 4.762 0.255 4.762 0.255 4.762 Indeno (1,2,3 - cd) Pyrene 1.874 4.780 1.866 4.762 1.866 4.762 1.866 4.762 Dibenzo (a,h) anthracene 1.635 4.780 1.629 4.762 1.629 4.762	•						-		
Benzo (b) Fluoranthene         0.718         4.780         0.715         4.762         0.715         4.762         0.715         4.762         0.715         4.762         0.715         4.762         0.672         4.762         0.672         4.762         0.672         4.762         0.672         4.762         0.672         4.762         0.672         4.762         0.672         4.762         0.672         4.762         0.672         4.762         0.803         4.762         0.961         4.762         0.961         4.762         0.961         4.762         0.961         4.762         0.961         4.762         0.803         4.762         0.803         4.762         0.803         4.762         0.803         4.762         0.803         4.762         0.803         4.762         0.803         4.762         0.803         4.762         0.803         4.762         0.803         4.762         0.803         4.762         0.803         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         1.866         4.762         1.866         4.762         1.866         4.762         1.866         4.762         1.629	C4- Chrysenes								
Benzo (k) Fluoranthene         0.675         4.780         0.672         4.762         0.672         4.762         0.672         4.762           Benzo (e) Pyrene         0.965         4.780         0.961         4.762         0.961         4.762         0.961         4.762           Benzo (a) Pyrene         0.806         4.780         0.803         4.762         0.803         4.762         0.803         4.762           Perylene         0.256         4.780         0.255         4.762         0.255         4.762         0.255         4.762           Indeno (1,2,3 - cd) Pyrene         1.874         4.780         1.866         4.762         1.866         4.762         1.866         4.762           Dibenzo (a,h) anthracene         1.635         4.780         1.629         4.762         1.629         4.762         1.629         4.762	Benzo (b) Fluoranthene								
Benzo (e) Pyrene     0.965     4.780     0.961     4.762     0.961     4.762     0.961     4.762       Benzo (a) Pyrene     0.806     4.780     0.803     4.762     0.803     4.762     0.803     4.762       Perylene     0.256     4.780     0.255     4.762     0.255     4.762     0.255     4.762       Indeno (1,2,3 - cd) Pyrene     1.874     4.780     1.866     4.762     1.866     4.762     1.866     4.762       Dibenzo (a, h) anthracene     1.635     4.780     1.629     4.762     1.629     4.762     1.629     4.762	Benzo (k) Fluoranthene								
Benzo (a) Pyrene     0.806     4.780     0.803     4.762     0.803     4.762     0.803     4.762       Perylene     0.256     4.780     0.255     4.762     0.255     4.762     0.255     4.762       Indeno (1,2,3 - cd) Pyrene     1.874     4.780     1.866     4.762     1.866     4.762     1.866     4.762       Dibenzo (a,h) anthracene     1.635     4.780     1.629     4.762     1.629     4.762     1.629	Benzo (e) Pyrene	0.965							
Perylene         0.256         4.780         0.255         4.762         0.255         4.762         0.255         4.762           Indeno (1,2,3 - cd) Pyrene         1.874         4.780         1.866         4.762         1.866         4.762         1.866         4.762           Dibenzo (a,h) anthracene         1.635         4.780         1.629         4.762         1.629         4.762           Porno (a,h) anthracene         1.635         4.780         1.629         4.762         1.629         4.762	Benzo (a) Pyrene	0.806	4.780	0.803					
Indeno (1,2,3 - cd) Pyrene         1.874         4.780         1.866         4.762         1.866         4.762         1.866         4.762           Dibenzo (a,h) anthracene         1.635         4.780         1.629         4.762         1.629         4.762         1.629         4.762           Postra (a,h) anthracene         1.635         4.780         1.629         4.762         1.629         4.762	Perylene	0.256	4.780	0.255	4.762				
Dibenzo (a,h) anthracene 1.635 4.780 1.629 4.762 1.629 4.762 1.629 4.762		1.874	4.780	1.866					
	Dibenzo (a,h) anthracene					1.629	4.762		
	Benzo (g,h,i) perylene	2.109	4.780	2.101	4.762	2.101	4.762	2.101	

### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Client:
Project Name:

Hovensa St. Croix Spill

Client ID	3523828-001 PS	152909 BLANK	152910 LCS	152911 LCSD
RCAT ID	2010355-23	2010355-24	2010355-25	2010355-26
Sample Matrix	Water	Water	Water	Water
Analytical Instrument	Mustang	Mustang	Mustang	Mustang
% Moisture	0	0	0	0
% Lipid				
Sample Size	1048	1000	1000	1000
Sample Unit-Basis	ml	ml	ml	ml
Units	ug/L	ug/L	ug/L	ug/L
nC-10 Decane	U	U	U	U
nC-11 Undecane	U	U	U	U
nC-12 Dodecane	U	υ	U	U
nC-13 Tridecane	U	U	U	Ü
nC-14 Tetradecane	U	U	U	U
nC-15 Pentadecane	U	U	0.026 J	0.024 J
nC-16 Hexadecane	0.036 J	U	0.034 J	0.030 J
nC-17 Heptadecane	U	U	U	U
Pristane	U	U	U	U
nC-18 Octadecane	U	U	U	U
Phytane	U	U	U	U
nC-19 Nonadecane	U	U	U	U
nC-20 Eicosane	U	U	U	U
nC-21 Heneicosane	U	U	U	U
nC-22 Docosane	U	U	U	U
nC-23 Tricosane	U	U	U	U
nC-24 Tetracosane	U	U	U	U
nC-25 Pentacosane	U	U	U	U
nC-26 Hexacosane	U	U	U	U
nC-27 Heptacosane	U	U	U	U
nC-28 Octacosane	U	U	U	U
nC-29 Nonacosane	U	U	U	U
nC-30 Triacontane	U	U	U	U
nC-31 Hentriacontane	U	U	U	U
nC-32 Dotriacontane	U	U	U	U
nC-33 Tritriacontane	U	U	U	U
nC-34 Tetratriacontane	U	U	U	U
nC-35 Pentatriacontane	U	U	U	U
Total Alkanes	0.036	0.000	0.060	0.054

Surrogate Recovery (%)			· · · · · · · · · · · · · · · · · · ·	***************************************
5 Alpha Androstane	0	0	0	0

### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Hovensa

Project Name:

St. Croix Spill

Sample Matrix         Water         Mustang	010355-26 Water Mustang 0 0 1000 ml	r B D D
Sample Matrix         Water         Water         Water           Analytical Instrument         Mustang         Mustang         Mustang           Moisture         0         0         0           \$ Lipid         0         0         0           5 Sample Size         1048         1000         1000           Sample Unit-Basis         ml         ml         ml         ml           Units         ng/L         ng/L         ng/L         ng/L           Naphthalene         U <td< td=""><td>Water Mustang 0 0 1000 ml</td><td>r B D D</td></td<>	Water Mustang 0 0 1000 ml	r B D D
Analytical Instrument	Mustang 0 0 1000 ml	g D D D
% Moisture         0         0         0           % Lipid         0         0         0           Sample Size         1048         1000         1000           Sample Unit-Basis         ml         ml         ml         ml           Units         ng/L         ng/L         ng/L         ng/L           Naphthalenes         U         ng/L         ng/L         3400           C1-Naphthalenes         U         U         U         U           C2-Naphthalenes         U         U         U         U           C3-Naphthalenes         U         U         U         U           C3-Pilorenes         U         U         U         U         U         U         U         U         U         U         U         U         U         U <td>0 0 1000 ml</td> <td>) ) )</td>	0 0 1000 ml	) ) )
Sample Size   1048   1000	0 1000 ml	) ) 
Sample Size         1048         1000         1000           Sample Unit-Basis         ml         ml         ml         ml           Units         ng/L         ng/L         ng/L           Naphthalenes         U         ng/L         3400           C1-Naphthalenes         U         U         U           C2-Naphthalenes         U         U         U         U           C3-Naphthalenes         U         U         U         U         U           C4-Naphthalenes         U         <	1000 ml	)
Sample Units   Samp	ml	ı
Units         ng/L         ng/L         ng/L           Naphthalene         U         U         U         U           C1-Naphthalenes         U         U         U         U           C2-Naphthalenes         U         U         U         U           C3-Naphthalenes         U         U         U         U           Fluorenes         U         U         U         U         U           Fluorenes         U </td <td>ml</td> <td>ı</td>	ml	ı
Units         ng/L         ng/L         ng/L           Naphthalenes         U </td <td></td> <td></td>		
Naphthalene         U <td< td=""><td></td><td>_</td></td<>		_
C2-Naphthalenes         U		
C2-Naphthalenes         U	3420	)
C3-Naphthalenes       U		U
C4-Naphthalenes         U         U         3920           Fluorene         U         U         U           C1-Fluorenes         U         U         U           C2-Fluorenes         U         U         U           Dibenzothiophenes         U         U         U           C1-Dibenzothiophenes         U         U         U           C1-Dibenzothiophenes         U         U         U           C2-Dibenzothiophenes         U         U         U           C3- Dibenzothiophenes         U         U         U           C1-Phenanthrenes         U         U         U         U           C1-Phenanthrenes         U         U         U         U           C3-Phenanthrenes         U         U         U         U           C4-Phenanthrenes         U         U         U         U           C4-Phenanthrenes         U         U         U         U           C4-Phenanthrenes         U <td></td> <td>U</td>		U
Fluorene		U
C1-Fluorenes       U <t< td=""><td></td><td>U</td></t<>		U
C2-Fluorenes       U       U       U         C3-Fluorenes       U       U       U         Dibenzothiophene       U       U       U         C1-Dibenzothiophenes       U       U       U         C2-Dibenzothiophenes       U       U       U         C3-Dibenzothiophenes       U       U       U         Phenanthrene       U       U       U         C1-Phenanthrenes       U       U       U         C1-Phenanthrenes       U       U       U         C3-Phenanthrenes       U       U       U         C4-Phenanthrenes       U       U       U         U       U       U       U	3890	j
C3- Fluorenes		U
Dibenzothiophene         U         U         U           C1-Dibenzothiophenes         U         U         U           C2-Dibenzothiophenes         U         U         U           C3-Dibenzothiophenes         U         U         U           C3-Dibenzothiophenes         U         U         U           Phenanthrene         U         U         U           C1-Phenanthrenes         U         U         U           C2-Phenanthrenes         U         U         U           C3-Phenanthrenes         U         U         U           C4-Phenanthrenes         U         U         U           C1-Pyrenes         U         U         U           C2-Pyrenes         U		U
C1-Dibenzothiophenes       U       U       U         C2-Dibenzothiophenes       U       U       U         C3- Dibenzothiophenes       U       U       U         Phenanthrene       U       U       U       U         C1-Phenanthrenes       U       U       U       U         C2-Phenanthrenes       U       U       U       U         C3-Phenanthrenes       U       U       U       U         C4-Phenanthrenes       U       U       U       U         Anthracene       U       U       U       U         Fluoranthene       U       U       U       4070         Fluoranthene       U       U       U       3690         Pyrene       U       U       U       U         C1- Pyrenes       U       U       U       U         C2- Pyrenes       U       U       U       U         C3- Pyrenes       U       U       U       U         C4- Pyrenes       U       U       U       U         C4- Pyrenes       U       U       U       U         C4- Pyrenes       U       U       U <td< td=""><td></td><td>Ū</td></td<>		Ū
C2-Dibenzothiophenes       U       U       U         C3- Dibenzothiophenes       U       U       U         Phenanthrene       U       U       U       3570         C1-Phenanthrenes       U       U       U       U       U         C2-Phenanthrenes       U </td <td></td> <td>Ū</td>		Ū
C3- Dibenzothiophenes       U       U       U       U       3570         Phenanthrene       U		Ū
Phenanthrene         U         U         3570           C1-Phenanthrenes         U         U         U           C2-Phenanthrenes         U         U         U           C3-Phenanthrenes         U         U         U           C4-Phenanthrenes         U         U         U           C1-Phenanthrenes         U         U         U         U           C3-Pyrenes         U         U         U         U           C4-Pyrenes         U         U         U         U           C3-Pyrenes         U         U         U <td></td> <td>Ū</td>		Ū
C1-Phenanthrenes       U		Ū
C1-Phenanthrenes       U       U       U         C2-Phenanthrenes       U       U       U         C3-Phenanthrenes       U       U       U         C4-Phenanthrenes       U       U       U         Anthracene       U       U       4070         Fluoranthene       U       U       3690         Pyrene       U       U       3650         C1- Pyrenes       U       U       U         C2- Pyrenes       U       U       U         C3- Pyrenes       U       U       U         C4- Pyrenes       U       U       U         C4- Pyrenes       U       U       U         C4- Pyrenes       U       U       U         C3- Pyrenes       U       U       U         C4- Pyrenes       U       U       U         C4- Pyrenes       U       U       U         C3- Rypthobenzothiophenes       U       U       U         C-2 Naphthobenzothiophenes       U       U       U         C-3 Naphthobenzothiophenes       U       U       U       U         C-3 Naphthobenzothiophenes       U       U       U	3600	
C2-Phenanthrenes       U       U       U         C3-Phenanthrenes       U       U       U         C4-Phenanthrenes       U       U       U         Anthracene       U       U       4070         Fluoranthene       U       U       3690         Pyrene       U       U       3650         C1- Pyrenes       U       U       U         C2- Pyrenes       U       U       U         C3- Pyrenes       U       U       U         C4- Pyrenes       U       U       U         C4- Pyrenes       U       U       U         Naphthobenzothiophene       U       U       U         C-1 Naphthobenzothiophenes       U       U       U         C-2 Naphthobenzothiophenes       U       U       U         C-3 Naphthobenzothiophenes       U       U       U         C-3 Naphthobenzothiophenes       U       U       U         C-3 Naphthobenzothiophenes       U       U       U         Benzo (a) Anthracene       U       U       U		U
C3-Phenanthrenes       U       U       U         C4-Phenanthrenes       U       U       U         Anthracene       U       U       U       4070         Fluoranthene       U       U       3690       U       9690       U       0		Ŭ
C4-Phenanthrenes       U       U       U       4070         Anthracene       U       U       4070         Fluoranthene       U       U       3690         Pyrene       U       U       3650         C1- Pyrenes       U       U       U         C2- Pyrenes       U       U       U         C3- Pyrenes       U       U       U         C4- Pyrenes       U       U       U         Naphthobenzothiophene       U       U       U         C-1 Naphthobenzothiophenes       U       U       U         C-2 Naphthobenzothiophenes       U       U       U         C-3 Naphthobenzothiophenes       U       U       U         C-1 Naphthobenzothiophenes       U       U       U         C-3 Naphthobenzothiophenes       U       U       U         C-3 Naphthobenzothiophenes       U       U       U         C-4 Naphthobenzothiophenes       U       U       U		Ŭ
Anthracene         U         U         4070           Fluoranthene         U         U         3690           Pyrene         U         U         3650           C1- Pyrenes         U         U         U           C2- Pyrenes         U         U         U           C3- Pyrenes         U         U         U           C4- Pyrenes         U         U         U           C4- Pyrenes         U         U         U           C1- Naphthobenzothiophene         U         U         U           C-1 Naphthobenzothiophenes         U         U         U           C-2 Naphthobenzothiophenes         U         U         U           C-3 Naphthobenzothiophenes         U         U         U           C-3 Naphthobenzothiophenes         U         U         U           C-1 Naphthobenzothiophenes         U         U         U           C-2 Naphthobenzothiophenes         U         U         U           C-3 Naphthobenzothiophenes         U         U         U           C-1 Naphthobenzothiophenes         U         U         U           C-2 Naphthobenzothiophenes         U         U         U		Ŭ
Fluoranthene         U         U         3690           Pyrene         U         U         3650           C1- Pyrenes         U         U         U           C2- Pyrenes         U         U         U           C3- Pyrenes         U         U         U           C4- Pyrenes         U         U         U           C4- Pyrenes         U         U         U           Naphthobenzothiophene         U         U         U           C-1 Naphthobenzothiophenes         U         U         U           C-2 Naphthobenzothiophenes         U         U         U           C-3 Naphthobenzothiophenes         U         U         U           Benzo (a) Anthracene         U         U         U         3570	4190	•
Pyrene         U         U         3650           C1- Pyrenes         U         U         U           C2- Pyrenes         U         U         U           C3- Pyrenes         U         U         U           C4- Pyrenes         U         U         U           Naphthobenzothiophene         U         U         U           C-1 Naphthobenzothiophenes         U         U         U           C-2 Naphthobenzothiophenes         U         U         U           C-3 Naphthobenzothiophenes         U         U         U           Benzo (a) Anthracene         U         U         3570	3540	
C1- Pyrenes       U       U       U         C2- Pyrenes       U       U       U         C3- Pyrenes       U       U       U         C4- Pyrenes       U       U       U         Naphthobenzothiophene       U       U       U         C-1 Naphthobenzothiophenes       U       U       U         C-2 Naphthobenzothiophenes       U       U       U         C-3 Naphthobenzothiophenes       U       U       U         Benzo (a) Anthracene       U       U       U	3570	
C2- Pyrenes         U         U         U           C3- Pyrenes         U         U         U           C4- Pyrenes         U         U         U           Naphthobenzothiophene         U         U         U           C-1 Naphthobenzothiophenes         U         U         U           C-2 Naphthobenzothiophenes         U         U         U           C-3 Naphthobenzothiophenes         U         U         U           Benzo (a) Anthracene         U         U         3570	00.0	U
C3- Pyrenes         U         U         U           C4- Pyrenes         U         U         U           Naphthobenzothiophene         U         U         U           C-1 Naphthobenzothiophenes         U         U         U           C-2 Naphthobenzothiophenes         U         U         U           C-3 Naphthobenzothiophenes         U         U         U           Benzo (a) Anthracene         U         U         3570		Ü
C4- Pyrenes         U         U         U           Naphthobenzothiophene         U         U         U           C-1 Naphthobenzothiophenes         U         U         U           C-2 Naphthobenzothiophenes         U         U         U           C-3 Naphthobenzothiophenes         U         U         U           Benzo (a) Anthracene         U         U         3570		Ü
Naphthobenzothiophene         U         U         U           C-1 Naphthobenzothiophenes         U         U         U           C-2 Naphthobenzothiophenes         U         U         U           C-3 Naphthobenzothiophenes         U         U         U           Benzo (a) Anthracene         U         U         3570		Ŭ
C-1 Naphthobenzothiophenes         U         3570         U         3570         U         <		Ü
C-2 Naphthobenzothiophenes         U         U         U         U         U         U         U         U         U         U         U         U         3570		Ŭ
C-3 Naphthobenzothiophenes U U U Ü  Benzo (a) Anthracene U U 3570		Ü
Benzo (a) Anthracene U U 3570		Ŭ
	3530	•
Chrysene U U 4230	4220	
C1- Chrysenes U U U		U
C2- Chrysenes U Ü Ü		Ü
C3- Chrysenes U U Ü		Ŭ
C4- Chrysenes U Ü Ü		Ü
Benzo (b) Fluoranthene U Ü 3680	3490	•
Benzo (k) Fluoranthene U U 4290	4310	
Benzo (e) Pyrene U U U		U
Benzo (a) Pyrene U U 3400	3390	~
Perylene 0.455 J 0.295 J 0.334 J		U
Indeno (1,2,3 - cd) Pyrene U U 2050	1880	5
Dibenzo (a,h) anthracene U U 2540	2430	
Dane (a.b. )) and the	1700	
Total Aromatics 0.839 0.000 0 0 1790 47900	3 / (1)(1)	

% Surrogate Recovery				
Phenanthrene d-10	0	0	0	0

### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

rioject rame.	St. Croix Spin							
Client ID	35238	28-001 PS	15290	9 BLANK	1529	910 LCS	1529:	I1 LCSD
RCAT ID	2010	355-23	2010	355-24	2010	355-25	2010	355-26
Sample Matrix	W	ater ater	W	ater .	W	/ater		ater
Analytical Instrument	Mu	stang	Mu	stang		istang		stang
% Moisture		0		0		0		0
% Lipid		0		0		0		0
Sample Size	1	048	1	000	1	000		000
Sample Unit-Basis		ml	1	ml		ml		nl
Units	u	g/L	u	g/L	u	g/L		z/L
	MDL	RQL	MDL	RQL	MDL	RQL	MDL	RQL
nC-10 Decane	0.016	0.954	0.017	1.000	0.017	1.000	0.017	1.000
nC-11 Undecane	0.012	0.954	0.013	1.000	0.013	1.000	0.013	1.000
nC-12 Dodecane	0.014	0.954	0.015	1.000	0.015	1.000	0.015	1.000
nC-13 Tridecane	0.011	0.954	0.011	1.000	0.011	1.000	0.011	1.000
nC-14 Tetradecane	0.026	0.954	0.027	1.000	0.027	1.000	0.027	1.000
nC-15 Pentadecane	0.023	0.954	0.024	1.000	0.024	1.000	0.024	1.000
nC-16 Hexadecane	0.021	0.954	0.022	1.000	0.022	1.000	0.022	1.000
nC-17 Heptadecane	0.046	0.954	0.048	1.000	0.048	1.000	0.048	1.000
Pristane	0.044	0.954	0.046	1.000	0.046	1.000	0.046	1.000
nC-18 Octadecane	0.067	0.954	0.070	1.000	0.070	1.000	0.070	1.000
Phytane	0.069	0.954	0.073	1.000	0.073	1.000	0.073	1.000
nC-19 Nonadecane	0.038	0.954	0.039	1.000	0.039	1.000	0.039	1.000
nC-20 Eicosane	0.040	0.954	0.041	1.000	0.041	1.000	0.041	1.000
nC-21 Heneicosane	0.033	0.954	0.034	1.000	0.034	1.000	0.034	1.000
nC-22 Docosane	0.066	0.954	0.070	1.000	0.070	1.000	0.070	1.000
nC-23 Tricosane	0.037	0.954	0.039	1.000	0.039	1.000	0.039	1.000
nC-24 Tetracosane	0.059	0.954	0.062	1.000	0.062	1.000	0.062	1.000
nC-25 Pentacosane	0.186	0.954	0.195	1.000	0.195	1.000	0.195	1.000
nC-26 Hexacosane	0.157	0.954	0.165	1.000	0.165	1.000	0.165	1.000
nC-27 Heptacosane	0.124	0.954	0.130	1.000	0.130	1.000	0.130	1.000
nC-28 Octacosane	0.199	0.954	0.208	1.000	0.208	1.000	0.208	1.000
nC-29 Nonacosane	0.150	0.954	0.157	1.000	0.157	1.000	0.157	1.000
nC-30 Triacontane	0.083	0.954	0.087	1.000	0.087	1.000	0.087	1.000
nC-31 Hentriacontane	0.084	0.954	0.088	1.000	0.088	1.000	0.088	1.000
nC-32 Dotriacontane	0.048	0.954	0.051	1.000	0.051	1.000	0.051	1.000
nC-33 Tritriacontane	0.071	0.954	0.074	1.000	0.074	1.000	0.074	1.000
nC-34 Tetratriacontane	0.069	0.954	0.073	1.000	0.073	1.000	0.073	1.000
nC-35 Pentatriacontane	0.034	0.954	0.036	1.000	0.036	1.000	0.036	1.000

### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Name.	St. Croix Spin							
Client ID	35238	28-001 PS	15290	9 BLANK	1529	910 LCS	15291	I1 LCSD
RCAT ID	2010	)355-23	2010	355-24	2010	355-25	2010	355-26
Sample Matrix	\٨.	/ater		'ater		ater		
•								ater
Analytical Instrument	Mu	istang	Mu	stang	Mu	stang	Mu	stang
% Moisture		0		0		0		0
% Lipid		0		0		0		0
Sample Size	1	048	1	000	1	000		000
Sample Unit-Basis		ml		m!		ml		
Units		r ig/L		g/L				nl
Omes	MDL	RQL				g/L		g/L
Naphthalene	0.214	4.762	MDL 0.214	RQL 4.762	MDL	RQL	MDL	RQL
C1-Naphthalenes	0.214	4.762	0.214	4.762	0.214	4.762	0.214	4.762
C2-Naphthalenes	0.214	4.762	0.214	4.762	0.214	4.762	0.214	4.762
C3-Naphthalenes	0.214	4.762	0.214	4.762	0.214	4.762	0.214	4.762
C4-Naphthalenes	0.214	4.762	0.214	4.762	0.214	4.762	0.214	4.762
Fluorene	0.490	4.762	0.490		0.214	4.762	0.214	4.762
C1-Fluorenes	0.490	4.762	0.490	4.762 4.762	0.490	4.762	0.490	4.762
C2-Fluorenes	0.490	4.762	0.490	4.762	0.490	4.762	0.490	4.762
C3- Fluorenes	0.490	4.762	0.490	4.762	0.490 0.490	4.762	0.490	4.762
Dibenzothiophene	0.627	4.762	0.627			4.762	0.490	4.762
C1-Dibenzothiophenes	0.627	4.762	0.627	4.762 4.762	0.627 0.627	4.762	0.627	4.762
C2-Dibenzothiophenes	0.627	4.762	0.627	4.762	0.627	4.762	0.627	4.762
C3- Dibenzothiophenes	0.627	4.762	0.627	4.762	0.627	4.762	0.627	4.762
Phenanthrene	0.365	4.762	0.365	4.762		4.762	0.627	4.762
C1-Phenanthrenes	0.365	4.762	0.365	4.762	0.365 0.365	4.762	0.365	4.762
C2-Phenanthrenes	0.365	4.762	0.365	4.762		4.762	0.365	4.762
C3-Phenanthrenes	0.365	4.762	0.365	4.762	0.365 0.365	4.762 4.762	0.365 0.365	4.762
C4-Phenanthrenes	0.365	4.762	0.365	4.762	0.365	4.762		4.762
Anthracene	0.379	4.762	0.379	4.762	0.379	4.762	0.365 0.379	4.762
Fluoranthene	0.650	4.762	0.650	4.762	0.650	4.762	0.650	4.762 4.762
Pyrene	0.771	4.762	0.771	4.762	0.771	4.762	0.030	4.762
C1- Pyrenes	0.771	4.762	0.771	4.762	0.771	4.762	0.771	4.762
C2- Pyrenes	0.771	4.762	0.771	4.762	0.771	4.762	0.771	4.762
C3- Pyrenes	0.771	4.762	0.771	4.762	0.771	4.762	0.771	4.762
C4- Pyrenes	0.771	4.762	0.771	4.762	0.771	4.762	0.771	4.762
Naphthobenzothiophene	0.627	4.762	0.627	4.762	0.627	4.762	0.627	4.762
C-1 Naphthobenzothiophenes	0.627	4.762	0.627	4.762	0.627	4.762	0.627	4.762
C-2 Naphthobenzothiophenes	0.627	4.762	0.627	4.762	0.627	4.762	0.627	4.762
C-3 Naphthobenzothiophenes	0.627	4.762	0.627	4.762	0.627	4.762	0.627	4.762
Benzo (a) Anthracene	1.046	4.762	1.046	4.762	1.046	4.762	1.046	4.762
Chrysene	1.046	4.762	1.046	4.762	1.046	4.762	1.046	4.762
C1- Chrysenes	1.046	4.762	1.046	4.762	1.046	4.762	1.046	4.762
C2- Chrysenes	1.046	4.762	1.046	4.762	1.046	4.762	1.046	4.762
C3- Chrysenes	1.046	4.762	1.046	4.762	1.046	4.762	1.046	4.762
C4- Chrysenes	1.046	4.762	1.046	4.762	1.046	4.762	1.046	4.762
Benzo (b) Fluoranthene	0.715	4.762	0.715	4.762	0.715	4.762	0.715	4.762
Benzo (k) Fluoranthene	0.672	4.762	0.672	4.762	0.672	4.762	0.672	4.762
Benzo (e) Pyrene	0.961	4.762	0.961	4.762	0.961	4.762	0.961	4.762
Benzo (a) Pyrene	0.803	4.762	0.803	4.762	0.803	4.762	0.803	4.762
Perylene	0.255	4.762	0.255	4.762	0.255	4.762	0.255	4.762
Indeno (1,2,3 - cd) Pyrene	1.866	4.762	1.866	4.762	1.866	4.762	1.866	4.762
Dibenzo (a,h) anthracene	1.629	4.762	1.629	4.762	1.629	4.762	1.629	4.762
Benzo (g,h,i) perylene	2.101	4.762	2.101	4.762	2.101	4.762	2.101	4.762

### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Client:

Hovensa

Project Name:

St. Croix Spill

Client ID	3523829-001 PS	3523829-002 PS	3523830-001 PS	3523831-001 PS
RCAT ID	2010355-27	2010355-28	2010355-29	2010355-30
Sample Matrix	Water	Water	Water	Water
Analytical Instrument	Mustang	Mustang	Mustang	Mustang
% Moisture	0	0	0	0
% Lipid				
Sample Size	1045	1046	1044	1032
Sample Unit-Basis	ml	ml	ml	ml
Units	ug/L	ug/L	ug/L	ug/L
nC-10 Decane	U	U	U	U
nC-11 Undecane	U	υ	U	U
nC-12 Dodecane	U	U	U	U
nC-13 Tridecane	U	U	U	U
nC-14 Tetradecane	U	U	U	U
nC-15 Pentadecane	Ù	U	U	U
nC-16 Hexadecane	U	0.034 J	0.024 J	U
nC-17 Heptadecane	U	U	U	U
Pristane	U	U	U	U
nC-18 Octadecane	บ	U	U	U
Phytane	U	U	U	U
nC-19 Nonadecane	U	U	U	U
nC-20 Eicosane	U	U	U	U
nC-21 Heneicosane	U	U	U	U
nC-22 Docosane	U	U	U	U
nC-23 Tricosane	U	U	U	0.110 J
nC-24 Tetracosane	U	0.115 J	U	0.175 J
nC-25 Pentacosane	U	U	U	0.688 J
nC-26 Hexacosane	U	U	U	0.424 J
nC-27 Heptacosane	U	U	U	0.789 J
nC-28 Octacosane	υ	U	U	0.428 J
nC-29 Nonacosane	U	U	U	0.978
nC-30 Triacontane	U	U	U	0.538 J
nC-31 Hentriacontane	U	U	U	1.17
nC-32 Dotriacontane	U	U	U	0.310 J
nC-33 Tritriacontane	U	U	U	0.280 J
nC-34 Tetratriacontane	U	U	U	0.076 J
nC-35 Pentatriacontane	U	U	U	0.067 J
Total Alkanes	0.000	0.149	0.024	6.04

Surrogate Recovery (%)	-			
5 Alpha Androstane	0	0	0	0

### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Name.	St. Croix Spili			
Client ID	3523829-001 PS	3523829-002 PS	3523830-001 PS	3523831-001 PS
RCAT ID	2010355-27	2010355-28	2010355-29	2010355-30
Sample Matrix	Water	Water	Water	Water
Analytical Instrument	Mustang	Mustang	Mustang	Mustang
% Moisture	0	0	0	0
% Lipid	0.000	0	0	0
Sample Size	1045	1046	1044	1032
Sample Unit-Basis	ml	mi	ml	ml
Units	ng/L	ng/L	ng/L	ng/L
Naphthalene	U	U	U	U
C1-Naphthalenes	U	U	U	U
C2-Naphthalenes	U	U	U	U
C3-Naphthalenes	U	U	U	U
C4-Naphthalenes	U	U	U	U
Fluorene	U	U	U	U
C1-Fluorenes	U	U	U	U
C2-Fluorenes	U	U	U	U
C3- Fluorenes	U	U	U	U
Dibenzothiophene	U	U	U	U
C1-Dibenzothiophenes	U	U	U	U
C2-Dibenzothiophenes	U	U	U	U
C3- Dibenzothiophenes	Ū	U	U	U
Phenanthrene	Ū	Ū	Ü	U
C1-Phenanthrenes	Ū	Ū	Ū	Ū
C2-Phenanthrenes	Ü	Ŭ	Ü	Ũ
C3-Phenanthrenes	Ü	Ü	Ü	Ü
C4-Phenanthrenes	Ü	Ü	ŭ	Ü
Anthracene	Ü	Ü	ŭ	Ũ
Fluoranthene	Ü	ŭ	Ü	Ũ
Pyrene	Ü	Ü	Ü	Ŭ
C1- Pyrenes	Ü	Ü	Ü	Ü
•	Ü	U	Ŭ	U
C2- Pyrenes	Ü	U	Ü	U
C3- Pyrenes	Ü	U	Ü	Ü
C4- Pyrenes	Ü	U	Ü	U
Naphthobenzothiophene	U	U	U	U
C-1 Naphthobenzothiophenes	U	U	U	U
C-2 Naphthobenzothiophenes		U	U	U
C-3 Naphthobenzothiophenes	U			U
Benzo (a) Anthracene	U	U	U	
Chrysene	U	U	Ü	U
C1- Chrysenes	U	U	U	U
C2- Chrysenes	U	U	U	U
C3- Chrysenes	U	U	U	U
C4- Chrysenes	U	U	U	U
Benzo (b) Fluoranthene	U	U	U	U
Benzo (k) Fluoranthene	U	U	U	U
Benzo (e) Pyrene	U	U	U	U
Benzo (a) Pyrene	U	U	U	U
Perylene	U	U	U	U
Indeno (1,2,3 - cd) Pyrene	U	U	U	U
Dibenzo (a,h) anthracene	U	U	U	U
Benzo (g,h,i) perylene	U	U	U	U
Total Aromatics	0.000	0.000	0.000	0.000

% Surrogate Recovery				
Phenanthrene d-10	0	0	0	0

### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Name:	St. Croix Spill								
Client ID	3523829-001 PS		352382	3523829-002 PS		3523830-001 PS		3523831-001 PS	
RCAT ID	2010355-27		2010	2010355-28		2010355-29		2010355-30	
Sample Matrix	w	ater	W	ater	w	ater	w	ater	
Analytical Instrument	Mu	stang	Mu	stang	Mu	stang	Mu	stang	
% Moisture		0		0		0		0	
% Lipid		0		0	0		0		
Sample Size	10	045	10	046	10	044	1032		
Sample Unit-Basis	ſ	nl	r	ml		ml	ı	nl	
Units	u	g/L	u	g/L	u	g/L	u,	g/L	
	MDL	RQL	MDL	RQL	MDL	RQL	MDL	RQL	
nC-10 Decane	0.016	0.957	0.016	0.956	0.016	0.958	0.016	0.969	
nC-11 Undecane	0.012	0.952	0.012	0.956	0.012	0.958	0.012	0.969	
nC-12 Dodecane	0.014	0.952	0.014	0.956	0.014	0.958	0.014	0.969	
nC-13 Tridecane	0.011	0.952	0.011	0.956	0.011	0.958	0.011	0.969	
nC-14 Tetradecane	0.026	0.952	0.026	0.956	0.026	0.958	0.026	0.969	
nC-15 Pentadecane	0.023	0.952	0.023	0.956	0.023	0.958	0.023	0.969	
nC-16 Hexadecane	0.021	0.952	0.021	0.956	0.021	0.958	0.022	0.969	
nC-17 Heptadecane	0.046	0.952	0.046	0.956	0.046	0.958	0.046	0.969	
Pristane	0.044	0.952	0.044	0.956	0.044	0.958	0.045	0.969	
nC-18 Octadecane	0.067	0.952	0.067	0.956	0.067	0.958	0.068	0.969	
Phytane	0.069	0.952	0.069	0.956	0.070	0.958	0.070	0.969	
nC-19 Nonadecane	0.038	0.952	0.038	0.956	0.038	0.958	0.038	0.969	
nC-20 Eicosane	0.039	0.952	0.040	0.956	0.040	0.958	0.040	0.969	
nC-21 Heneicosane	0.033	0.952	0.033	0.956	0.033	0.958	0.033	0.969	
nC-22 Docosane	0.066	0.952	0.066	0.956	0.067	0.958	0.067	0.969	
nC-23 Tricosane	0.037	0.952	0.037	0.956	0.037	0.958	0.038	0.969	
nC-24 Tetracosane	0.059	0.952	0.059	0.956	0.059	0.958	0.060	0.969	
nC-25 Pentacosane	0.186	0.952	0.186	0.956	0.187	0.958	0.189	0.969	
nC-26 Hexacosane	0.157	0.952	0.158	0.956	0.158	0.958	0.160	0.969	
nC-27 Heptacosane	0.124	0.952	0.125	0.956	0.125	0.958	0.126	0.969	
nC-28 Octacosane	0.199	0.952	0.199	0.956	0.200	0.958	0.202	0.969	
nC-29 Nonacosane	0.150	0.952	0.150	0.956	0.150	0.958	0.152	0.969	
nC-30 Triacontane	0.083	0.952	0.083	0.956	0.083	0.958	0.084	0.969	
nC-31 Hentriacontane	0.084	0.952	0.084	0.956	0.085	0.958	0.085	0.969	
nC-32 Dotriacontane	0.048	0.952	0.048	0.956	0.048	0.958	0.049	0.969	
nC-33 Tritriacontane	0.070	0.952	0.071	0.956	0.071	0.958	0.072	0.969	
nC-34 Tetratriacontane	0.069	0.952	0.069	0.956	0.069	0.958	0.070	0.969	
nC-35 Pentatriacontane	0.034	0.952	0.034	0.956	0.034	0.958	0.035	0.969	

### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Name:	St. Croix Spill								
Client ID	352382	9-001 PS	352382	9-002 PS	352383	30-001 PS	352383	1-001 PS	
RCAT ID	2010355-27		2010	2010355-28		2010355-29		2010355-30	
Sample Matrix	Water		w	ater	w	ater		ater	
Analytical Instrument	Mustang			stang					
·		•		-		stang		stang	
% Moisture		0		0		0		0	
% Lipid		0		0		0		0	
Sample Size	10	045	10	046	1044		1032		
Sample Unit-Basis		ml	,	ml		mi	ml		
Units		g/L		g/L		g/L		 ₹/L	
	MDL	RQL	MDL	RQL	MDL	RQL	MDL	RQL	
Naphthalene	0.215	4.785	0.215	4.780	0.215	4.780	0.215	4.780	
C1-Naphthalenes	0.215	4.785	0.215	4.780	0.215	4.780	0.215	4.780	
C2-Naphthalenes	0.215	4.785	0.215	4.780	0.215	4.780	0.215	4.780	
C3-Naphthalenes	0.215	4.785	0.215	4.780	0.215	4.780	0.215	4.780	
C4-Naphthalenes	0.215	4.785	0.215	4.780	0.215	4.780	0.215	4.780	
Fluorene	0.492	4.785	0.492	4.780	0.492	4.780	0.492	4.780	
C1-Fluorenes	0.492	4.785	0.492	4.780	0.492	4.780	0.492	4.780	
C2-Fluorenes	0.492	4.785	0.492	4.780	0.492	4.780	0.492		
C3- Fluorenes	0.492	4.785	0.492	4.780	0.492	4.780		4.780	
Dibenzothiophene	0.630	4.785	0.630				0.492	4.780	
C1-Dibenzothiophenes	0.630	4.785		4.780	0.630	4.780	0.630	4.780	
			0.630	4.780	0.630	4.780	0.630	4.780	
C2-Dibenzothiophenes	0.630	4.785	0.630	4.780	0.630	4.780	0.630	4.780	
C3- Dibenzothiophenes	0.630	4.785	0.630	4.780	0.630	4.780	0.630	4.780	
Phenanthrene	0.366	4.785	0.366	4.780	0.366	4.780	0.366	4.780	
C1-Phenanthrenes	0.366	4.785	0.366	4.780	0.366	4.780	0.366	4.780	
C2-Phenanthrenes	0.366	4.785	0.366	4.780	0.366	4.780	0.366	4.780	
C3-Phenanthrenes	0.366	4.785	0.366	4.780	0.366	4.780	0.366	4.780	
C4-Phenanthrenes	0.366	4.785	0.366	4.780	0.366	4.780	0.366	4.780	
Anthracene	0.381	4.785	0.381	4.780	0.381	4.780	0.381	4.780	
Fluoranthene	0.653	4.785	0.653	4.780	0.653	4.780	0.653	4.780	
Pyrene	0.774	4.785	0.774	4.780	0.774	4.780	0.774	4.780	
C1- Pyrenes	0.774	4.785	0.774	4.780	0.774	4.780	0.774	4.780	
C2- Pyrenes	0.774	4.785	0.774	4.780	0.774	4.780	0.774	4.780	
C3- Pyrenes	0.774	4.785	0.774	4.780	0.774	4.780	0.774	4.780	
C4- Pyrenes	0.774	4.785	0.774	4.780	0.774	4.780	0.774	4.780	
Naphthobenzothiophene	0.630	4.785	0.630	4.780	0.630	4.780	0.630	4.780	
C-1 Naphthobenzothiophenes	0.630	4.785	0.630	4.780	0.630	4.780	0.630	4.780	
C-2 Naphthobenzothiophenes	0.630	4.785	0.630	4.780	0.630	4.780	0.630	4.780	
C-3 Naphthobenzothiophenes	0.630	4.785	0.630	4.780	0.630	4.780	0.630	4.780	
Benzo (a) Anthracene	1.051	4.785	1.050	4.780	1.050	4.780	1.050	4.780	
Chrysene	1.051	4.785	1.050	4.780	1.050	4.780	1.050	4.780	
C1- Chrysenes	1.051	4.785	1.050	4.780	1.050	4.780	1.050	4.780	
C2- Chrysenes	1,051	4.785	1.050	4.780	1.050	4.780	1.050	4.780	
C3- Chrysenes	1.051	4.785	1.050	4.780	1.050	4.780	1.050	4.780	
C4- Chrysenes	1.051	4.785	1.050	4.780	1.050	4.780	1.050	4.780	
Benzo (b) Fluoranthene	0.719	4.785	0.718	4.780	0.718	4.780	0.718	4.780	
Benzo (k) Fluoranthene	0.675	4.785	0.675	4.780	0.675	4.780	0.716	4.780	
Benzo (e) Pyrene	0.966	4.785	0.965	4.780	0.965	4.780	0.675		
Benzo (a) Pyrene	0.807	4.785						4.780	
Perylene	0.807	4.785 4.785	0.806	4.780	0.806	4.780	0.806	4.780	
•			0.256	4.780	0.256	4.780	0.256	4.780	
Indeno (1,2,3 - cd) Pyrene	1.875	4.785	1.874	4.780	1.874	4.780	1.874	4.780	
Dibenzo (a,h) anthracene	1.637	4.785	1.635	4.780	1.635	4.780	1.635	4.780	
Benzo (g,h,i) perylene	2.111	4.785	2.109	4.780	2.109	4.780	2.109	4.780	

# Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Client ID	3523832-001 PS	3523833-001 PS	3523834-001 PS	3523835-001 PS
RCAT ID	2010355-31	2010355-32	2010355-33	2010355-34
Sample Matrix	Water	Water	Water	Water
Analytical Instrument	Mustang	Mustang	Mustang	Mustang
% Moisture	0	0	0	0
% Lipid				
Sample Size	1050	1041	1050	913
Sample Unit-Basis	ml	ml	ml	ml
Units	ug/L	ug/L	ug/L	ug/L
nC-10 Decane	0			
nC-11 Undecane	U	U	U	U
nC-12 Dodecane	U	U	U	U
nC-13 Tridecane	U	U	U	U
nC-14 Tetradecane	U	U	U	U
nC-15 Pentadecane	U	U	U	U
nC-16 Hexadecane	U	U U	U	U
nC-17 Heptadecane	U		U	U
Pristane	U	U	U	U
nC-18 Octadecane	U	U	U	U
Phytane	U	U U	U	U
nC-19 Nonadecane	U	U	U	U
nC-20 Eicosane	U	U	U U	U
nC-21 Heneicosane	U	U	U	U
nC-22 Docosane	Ü	U	U	U U
nC-23 Tricosane	Ü	U	U	U
nC-24 Tetracosane	Ŭ	U	U	
nC-25 Pentacosane	Ü	U	U	U U
nC-26 Hexacosane	U	Ü	U	U
nC-27 Heptacosane	U	Ü	U	U
nC-28 Octacosane	U	U	U	U
nC-29 Nonacosane	Ü	Ü	U	U
nC-30 Triacontane	U	Ü	U	U
nC-31 Hentriacontane	0.139 J	Ü	U	U
nC-32 Dotriacontane	U	Ü	U	U
nC-33 Tritriacontane	Ü	Ŭ	U	U
nC-34 Tetratriacontane	Ü	Ü	U	U
nC-35 Pentatriacontane	U	Ŭ	U	U
Total Alkanes	0.139	0.000	0.000	0,000

Surrogate Recovery (%)		· · · · · · · · · · · · · · · · · · ·		
5 Alpha Androstane	0	0	0	0

## Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Client:	Hovensa			
Project Name:	St. Croix Spill			
Client ID	3523832-001 PS	3523833-001 PS	3523834-001 PS	3523835-001 PS
RCAT ID	2010355-31	2010355-32	2010355-33	2010355-34
Sample Matrix	Water	Water	Water	Water
Analytical Instrument	Mustang	Mustang	Mustang	Mustang
% Moisture	0	0	0	0
% Lipid	0	0	0	0
Sample Size	1050	1041	1050	
Sample Unit-Basis	ml	ml		913
Units	ng/L	ng/L	ml ng/L	ml ng/L
			3.5	
Naphthalene	U	U	به د بر	T U
C1-Naphthalenes C2-Naphthalenes	U U	U U	/ U	
C3-Naphthalenes	Ü	U	Ü	U
C4-Naphthalenes	Ü	Ŭ	Ü	Ü
Fluorene	Ü	Ű	Ü	Ü
C1-Fluorenes	Ú	Ū	Ü	Ű
C2-Fluorenes	U	U	U	Ü
C3- Fluorenes	U	U	U	U
Dibenzothiophene	U	U	U	U
C1-Dibenzothiophenes	U	U	U	U
C2-Dibenzothiophenes C3- Dibenzothiophenes	U U	U	U	U
Phenanthrene	Ü	U V	U U	U U
C1-Phenanthrenes	Ŭ	Ü	Ü	U
C2-Phenanthrenes	Ü	Ü	Ü	Ü
C3-Phenanthrenes	U	U	Ū	Ū
C4-Phenanthrenes	U	υ	U	Ū
Anthracene	U	U	U	U
Fluoranthene	Ü	U	U	U
Pyrene C1 Byrones	U	U	U	U
C1- Pyrenes C2- Pyrenes	U	U U	U	U
C3- Pyrenes	Ü	U	U	U U
C4- Pyrenes	Ü	Ü	Ü	Ü
Naphthobenzothiophene	Ū	Ũ	Ü	Ŭ
C-1 Naphthobenzothiophenes	U	U	U	Ū
C-2 Naphthobenzothiophenes	U	U	U	U
C-3 Naphthobenzothiophenes	U	U	U	U
Benzo (a) Anthracene Chrysene	U	U	U	U
C1- Chrysenes	U U	U U	U U	U
C2- Chrysenes	Ü	Ü	Ü	U U
C3- Chrysenes	Ü	Ü	Ŭ	Ü
C4- Chrysenes	U	U	Ū	Ū
Benzo (b) Fluoranthene	U	U	U	U
Benzo (k) Fluoranthene	U	U	U	U
Benzo (e) Pyrene	Ü	U	U	U
Benzo (a) Pyrene Perylene	U U	U	U	U
Indeno (1,2,3 - cd) Pyrene	Ü	U U	U U	U U
Dibenzo (a,h) anthracene	Ŭ	U	Ü	U
Benzo (g,h,i) perylene	Ū	Ü	, Ŭ	Ŭ
Total Aromatics	0.000	0.000	0.986	0.000
			3.54	
% Surrogate Recovery				
Phenanthrene d-10	0	0	0	0

# Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Name.	at. Croix apili							
Client ID	35238	32-001 PS	35238	33-001 PS	35238	34-001 PS	352383	35-001 PS
RCAT ID	2010355-31		2010	2010355-32		355-33	2010355-34	
Sample Matríx	W	/ater	W	/ater	w	ater ater	w	ater
Analytical Instrument	Mu	istang	Mu	stang	Mu	stang	Mu	stang
% Moisture		0		0		0		0
% Lipíd		0		0		0		0
Sample Size	1	050	1	041	1	050	9	13
Sample Unit-Basis		ml		ml		ml	r	ml
Units	u	ıg/L	u	g/L	u	g/L		g/L
	MDL	RQL	MDL	RQL	MDL	RQL	MDL	RQL
nC-10 Decane	0.016	0.952	0.016	0.961	0.016	0.952	0.019	1.095
nC-11 Undecane	0.012	0.952	0.012	0.961	0.012	0.952	0.014	1.095
nC-12 Dodecane	0.014	0.952	0.014	0.961	0.014	0.952	0.016	1.095
nC-13 Tridecane	0.011	0.952	0.011	0.961	0.011	0.952	0.012	1.095
nC-14 Tetradecane	0.026	0.952	0.026	0.961	0.026	0.952	0.030	1.095
nC-15 Pentadecane	0.023	0.952	0.023	0.961	0.023	0.952	0.026	1.095
nC-16 Hexadecane	0.021	0.952	0.022	0.961	0.021	0.952	0.025	1.095
nC-17 Heptadecane	0.046	0.952	0.046	0.961	0.046	0.952	0.053	1.095
Pristane	0.044	0.952	0.045	0.961	0.044	0.952	0.051	1.095
nC-18 Octadecane	0.067	0.952	0.068	0.961	0.067	0.952	0.077	1.095
Phytane	0.069	0.952	0.070	0.961	0.069	0.952	0.079	1.095
nC-19 Nonadecane	0.038	0.952	0.038	0.961	0.038	0.952	0.043	1.095
nC-20 Eicosane	0.039	0.952	0.040	0.961	0.039	0.952	0.045	1.095
nC-21 Heneicosane	0.033	0.952	0.033	0.961	0.033	0.952	0.038	1.095
nC-22 Docosane	0.066	0.952	0.067	0.961	0.066	0.952	0.076	1.095
nC-23 Tricosane	0.037	0.952	0.037	0.961	0.037	0.952	0.043	1.095
nC-24 Tetracosane	0.059	0.952	0.059	0.961	0.059	0.952	0.067	1.095
nC-25 Pentacosane	0.186	0.952	0.187	0.961	0.186	0.952	0.213	1.095
nC-26 Hexacosane	0.157	0.952	0.158	0.961	0.157	0.952	0.181	1.095
nC-27 Heptacosane	0.124	0.952	0.125	0.961	0.124	0.952	0.143	1.095
nC-28 Octacosane	0.199	0.952	0.200	0.961	0.199	0.952	0.228	1.095
nC-29 Nonacosane	0.150	0.952	0.151	0.961	0.150	0.952	0.172	1.095
nC-30 Triacontane	0.083	0.952	0.083	0.961	0.083	0.952	0.095	1.095
nC-31 Hentriacontane	0.084	0.952	0.085	0.961	0.084	0.952	0.097	1.095
nC-32 Dotriacontane	0.048	0.952	0.049	0.961	0.048	0.952	0.055	1.095
nC-33 Tritriacontane	0.070	0.952	0.071	0.961	0.070	0.952	0.081	1.095
nC-34 Tetratriacontane	0.069	0.952	0.070	0.961	0.069	0.952	0.079	1.095
nC-35 Pentatriacontane	0.034	0.952	0.034	0.961	0.034	0.952	0.039	1.095

## Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Name:	St. Croix Spill								
Client ID	35238	32-001 PS	35238	33-001 PS	35238	34-001 PS	352383	35-001 PS	
RCAT ID	2010355-31		2010	2010355-32		2010355-33		2010355-34	
Sample Matrix		ater		/ater					
·						/ater	W	ater	
Analytical Instrument	Mu	istang	Mu	istang	Mι	istang	Mu	stang	
% Moisture		0		0		0		0	
% Lipid		0		0		0		0	
Sample Size	1	050	1	041	1	050		13	
Sample Unit-Basis		ml		mi		mi		nl	
Units		g/L		ıg/L		g/L			
	MDL	RQL	MDL	RQL	MDL	RQL	MDL n	g/L	
Naphthalene	0.215	4.780	0.215	4.780	0.215	4.780	0.215	RQL	
C1-Naphthalenes	0.215	4.780	0.215	4.780	0.215	4.780	0.215	4.780 4.780	
C2-Naphthalenes	0.215	4.780	0.215	4.780	0.215	4.780	0.215	4.780	
C3-Naphthalenes	0.215	4.780	0.215	4.780	0.215	4.780	0.215	4.780	
C4-Naphthalenes	0.215	4.780	0.215	4.780	0.215	4.780	0.215	4.780	
Fluorene	0.492	4.780	0.492	4.780	0.492	4.780	0.492	4.780	
C1-Fluorenes	0.492	4.780	0.492	4.780	0.492	4.780	0.492	4.780	
C2-Fluorenes	0.492	4.780	0.492	4.780	0.492	4.780	0.492	4.780	
C3- Fluorenes	0.492	4.780	0.492	4.780	0.492	4.780	0.492	4.780	
Dibenzothiophene	0.630	4.780	0.630	4.780	0.630	4.780	0.630	4.780	
C1-Dibenzothiophenes	0.630	4.780	0.630	4.780	0.630	4.780	0.630	4.780	
C2-Dibenzothiophenes	0.630	4.780	0.630	4.780	0.630	4.780	0.630	4.780	
C3- Dibenzothiophenes	0.630	4.780	0.630	4.780	0.630	4.780	0.630	4.780	
Phenanthrene	0.366	4.780	0.366	4.780	0.366	4.780	0.366	4.780	
C1-Phenanthrenes C2-Phenanthrenes	0.366	4.780	0.366	4.780	0.366	4.780	0.366	4.780	
C3-Phenanthrenes	0.366	4.780	0.366	4.780	0.366	4.780	0.366	4.780	
C4-Phenanthrenes	0.366 0.366	4.780	0.366	4.780	0.366	4.780	0.366	4.780	
Anthracene	0.381	4.780 4.780	0.366	4.780	0.366	4.780	0.366	4.780	
Fluoranthene	0.653	4.780	0.381 0.653	4.780	0.381	4.780	0.381	4.780	
Pyrene	0.774	4.780	0.774	4.780 4.780	0.653	4.780	0.653	4.780	
C1- Pyrenes	0.774	4.780	0.774	4.780	0.774 0.774	4.780	0.774	4.780	
C2- Pyrenes	0.774	4.780	0.774	4.780	0.774	4.780	0.774	4.780	
C3- Pyrenes	0.774	4.780	0.774	4.780	0.774	4.780 4.780	0.774	4.780	
C4- Pyrenes	0.774	4.780	0.774	4.780	0.774	4.780	0.774 0.774	4.780 4.780	
Naphthobenzothiophene	0.630	4.780	0.630	4.780	0.630	4.780	0.630	4.780	
C-1 Naphthobenzothiophenes	0.630	4.780	0.630	4.780	0.630	4.780	0.630	4.780	
C-2 Naphthobenzothiophenes	0.630	4.780	0.630	4.780	0.630	4.780	0.630	4.780	
C-3 Naphthobenzothiophenes	0.630	4.780	0.630	4.780	0.630	4.780	0.630	4.780	
Benzo (a) Anthracene	1.050	4.780	1.050	4.780	1.050	4.780	1.050	4.780	
Chrysene	1.050	4.780	1.050	4.780	1.050	4.780	1.050	4.780	
C1- Chrysenes	1.050	4.780	1.050	4.780	1.050	4.780	1.050	4.780	
C2- Chrysenes	1.050	4.780	1.050	4.780	1.050	4.780	1.050	4.780	
C3- Chrysenes	1.050	4.780	1.050	4.780	1.050	4.780	1.050	4.780	
C4- Chrysenes	1.050	4.780	1.050	4.780	1.050	4.780	1.050	4.780	
Benzo (b) Fluoranthene	0.718	4.780	0.718	4.780	0.718	4.780	0.718	4.780	
Benzo (k) Fluoranthene	0.675	4.780	0.675	4.780	0.675	4.780	0.675	4.780	
Benzo (e) Pyrene Benzo (a) Pyrene	0.965	4.780	0.965	4.780	0.965	4.780	0.965	4.780	
Perylene	0.806	4.780	0.806	4.780	0.806	4.780	0.806	4.780	
Indeno (1,2,3 - cd) Pyrene	0.256 1.874	4.780	0.256	4.780	0.256	4.780	0.256	4.780	
Dibenzo (a,h) anthracene	1.635	4.780 4.780	1.874 1.635	4.780	1.874	4.780	1.874	4.780	
Benzo (g,h,i) perylene	2.109	4.780	2.109	4.780 4.780	1.635	4.780	1.635	4.780	
- (3//, Fo. J. 0/10	2.100	7.700	2.109	4.700	2.109	4.780	2.109	4.780	

## Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Client:

Hovensa

Project Name:

St. Croix Spill

Client ID	3523836-001 PS	3523837-001 PS	0.000	3523838-001 PS
RCAT ID	2010355-35	2010355-36	Method BLK	2010355-37
Sample Matrix	Water	Water	Water	Water
Analytical Instrument	Mustang	Mustang	Mustang	Mustang
% Moisture	0	О	0	0
% Lipid				
Sample Size	1014	994	1000	1041
Sample Unit-Basis	ml	ml	ml	ml
Units	ug/L	ug/L	ug/L	ug/L
nC-10 Decane	U	U	U	U
nC-11 Undecane	U	U	U	U
nC-12 Dodecane	U	U	U	U
nC-13 Tridecane	U	U	U	U
nC-14 Tetradecane	U	U	U	U
nC-15 Pentadecane	U	U	U	U
nC-16 Hexadecane	U	U	U	U
nC-17 Heptadecane	U	U	U	U
Pristane	U	U	U	U
nC-18 Octadecane	U	U	U	U
Phytane	U	U	U	U
nC-19 Nonadecane	U	U	U	U
nC-20 Eicosane	U	U	U	U
nC-21 Heneicosane	U	U	υ	U
nC-22 Docosane	υ	U	U	U
nC-23 Tricosane	U	U	U	U
nC-24 Tetracosane	U	U	U	U
nC-25 Pentacosane	U	U	U	U
nC-26 Hexacosane	U	U	U	U
nC-27 He <b>p</b> tacosane	U	U	U	U
nC-28 Octacosane	U	U	U	U
nC-29 Nonacosane	U	U	U	U
nC-30 Triacontane	U	U	U	U
nC-31 Hentriacontane	U	U	U	U
nC-32 Dotriacontane	U	U	U	U
nC-33 Tritriacontane	U	U	U	U
nC-34 Tetratriacontane	U	U	U	U
nC-35 Pentatriacontane	U	U	U	U
Total Alkanes	0.000	0.000	0.000	0.000

Surrogate Recovery (%)				
5 Alpha Androstane	0	0	0	0

# Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Client ID	3523836-001 PS	3523837-001 PS	0	3523838-001 PS
RCAT ID	2010355-35	2010355-36	Method BLK	2010355-37
Sample Matrix	Water	Water	Water	
Analytical Instrument				Water
•	Mustang	Mustang	Mustang	Mustang
% Moisture	0	0	0	0
% Lipid	0.000	0	0	0
Sample Size	1014	994	1000	1041
Sample Unit-Basis	ml	ml	ml	ml
Units	ng/L	ng/L	ng/L	ng/L
Naphthalene	0.307 U	U	U	U
C1-Naphthalenes	Ü	Ü	Ü	Ü
C2-Naphthalenes	Ŭ	Ü	ŭ	Ü
C3-Naphthalenes	U	Ū	Ü	Ŭ
C4-Naphthalenes	U	Ũ	Ŭ	ŭ
Fluorene	U	Ü	Ü	Ü
C1-Fluorenes	U	Û	Ü	Ü
C2-Fluorenes	U	U	Ü	Ŭ
C3- Fluorenes	U	U	Ū	Ü
Dibenzothiophene	U	U	Ŭ	Ũ
C1-Dibenzothiophenes	U	U	U	Ū
C2-Dibenzothiophenes	U	U	Û	Ū
C3- Dibenzothiophenes	U	U	U	Ū
Phenanthrene	U	U	U	Ū
C1-Phenanthrenes	U	U	U	Ů
C2-Phenanthrenes	U	U	U	Ū
C3-Phenanthrenes	U	U	U	U
C4-Phenanthrenes	U	U	υ	U
Anthracene	U	U	U	U
Fluoranthene	U	U	U	U
Pyrene	U	U	U	U
C1- Pyrenes	U	U	U	U
C2- Pyrenes	U	U	U	U
C3- Pyrenes	U	U	U	U
C4- Pyrenes	U	U	U	U
Naphthobenzothiophene	U	U	U	U
C-1 Naphthobenzothiophenes	ŭ	U	U	U
C-2 Naphthobenzothiophenes	Ü	U	U	U
C-3 Naphthobenzothiophenes Benzo (a) Anthracene	U	U	U	U
Chrysene	U U	U	U	U
C1- Chrysenes	Ü	U	U	U
C2- Chrysenes	Ü	U U	U	U
C3- Chrysenes	Ü	U	U	U
C4- Chrysenes	Ü	U	U U	U
Benzo (b) Fluoranthene	ŭ	ŭ	U	U
Benzo (k) Fluoranthene	ŭ	Ü	U	U U
Benzo (e) Pyrene	ŭ	Ü	U	U
Benzo (a) Pyrene	ŭ	ŭ	U	U
Perylene	Ü	Ŭ	Ü	U
Indeno (1,2,3 - cd) Pyrene	Ü	ŭ	U	Ü
Dibenzo (a,h) anthracene	Ŭ	ŭ	Ŭ	U
Benzo (g,h,i) perylene	Ŭ	ŭ	Ŭ	U
Total Aromatics	0.307	0.000	0.000	0.000

% Surrogate Recovery				
Phenanthrene d-10	0	0	0	0

#### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Name:	St. Croix Spili							
Client ID	352383	86-001 PS	352383	37-001 PS	0.	.000	352383	38-001 PS
RCAT ID	2010	355-35	2010	355-36	Meth	nod BŁK	2010	355-37
Sample Matrix	w	ater	w	ater	w	ater	w	ater
Analytical Instrument	Mu	stang	Mu	stang	Mu	stang	Mu	stang
% Moisture		0		0		0		0
% Lipid		0		0		0		0
Sample Size	1	014	9	94	1	000	10	041
Sample Unit-Basis	Í	ml		mł		ml	r	mi
Units	u	g/L	u	g/L	u	g/L	uį	g/L
	MDL	RQL	MDL	RQL	MDL	RQL	MDL	RQL
nC-10 Decane	0.017	0.986	0.017	1.006	0.017	1.000	0.016	0.961
nC-11 Undecane	0.012	0.952	0.013	1.006	0.013	1.000	0.012	0.961
nC-12 Dodecane	0.014	0.952	0.015	1.006	0.015	1.000	0.014	0.961
nC-13 Tridecane	0.011	0.952	0.011	1.006	0.011	1.000	0.011	0.961
nC-14 Tetradecane	0.026	0.952	0.027	1.006	0.027	1.000	0.026	0.961
nC-15 Pentadecane	0.023	0.952	0.024	1.006	0.024	1.000	0.023	0.961
nC-16 Hexadecane	0.021	0.952	0.023	1.006	0.022	1.000	0.022	0.961
nC-17 Heptadecane	0.046	0.952	0.048	1.006	0.048	1.000	0.046	0.961
Pristane	0.044	0.952	0.047	1.006	0.046	1.000	0.045	0.961
nC-18 Octadecane	0.067	0.952	0.071	1.006	0.070	1.000	0.068	0.961
Phytane	0.069	0.952	0.073	1.006	0.073	1.000	0.070	0.961
nC-19 Nonadecane	0.038	0.952	0.040	1.006	0.039	1.000	0.038	0.961
nC-20 Eicosane	0.039	0.952	0.042	1.006	0.041	1.000	0.040	0.961
nC-21 Heneicosane	0.033	0.952	0.035	1.006	0.034	1.000	0.033	0.961
nC-22 Docosane	0.066	0.952	0.070	1.006	0.070	1.000	0.067	0.961
nC-23 Tricosane	0.037	0.952	0.039	1.006	0.039	1.000	0.037	0.961
nC-24 Tetracosane	0.059	0.952	0.062	1.006	0.062	1.000	0.059	0.961
nC-25 Pentacosane	0.186	0.952	0.196	1.006	0.195	1.000	0.187	0.961
nC-26 Hexacosane	0.157	0.952	0.166	1.006	0.165	1.000	0.158	0.961
nC-27 Heptacosane	0.124	0.952	0.131	1.006	0.130	1.000	0.125	0.961
nC-28 Octacosane	0.199	0.952	0.210	1.006	0.208	1.000	0.200	0.961
nC-29 Nonacosane	0.150	0.952	0.158	1.006	0.157	1.000	0.151	0.961
nC-30 Triacontane	0.083	0.952	0.087	1.006	0.087	1.000	0.083	0.961
nC-31 Hentriacontane	0.084	0.952	0.089	1.006	0.088	1.000	0.085	0.961
nC-32 Dotriacontane	0.048	0.952	0.051	1.006	0.051	1.000	0.049	0.961
nC-33 Tritriacontane	0.070	0.952	0.074	1.006	0.074	1.000	0.071	0.961
nC-34 Tetratriacontane	0.069	0.952	0.073	1.006	0.073	1.000	0.070	0.961
nC-35 Pentatriacontane	0.034	0.952	0.036	1.006	0.036	1.000	0.034	0.961
								4.44.

## Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Name:	St. Croix Spill							
Client ID	352383	6-001 PS	352383	7-001 PS		0	352383	8-001 PS
CHETTE							332303	0 00113
RCAT ID	2010	355-35	2010	355-36	Meth	od BLK	2010	355-37
Sample Matrix	w	ater	W	ater	W:	ater	w	ater
Analytical Instrument		stang		stang		stang		stang
,		•		-		ū		•
% Moisture		0		0		0		0
% Lipid		0		0		0		0
Sample Size	10	014	9	94	10	000	10	041
Sample Unit-Basis	ı	ml	г	nl	r	nl	r	nl
Units	n	e/L	n	g/L		g/L		 g/L
	MDL	RQL	MDL	RQL	MDL	RQL	MDL	RQL
Naphthalene	0.221	4.931	0.226	5.030	0.226	5.030	0.226	5.030
C1-Naphthalenes	0.221	4.931	0.226	5.030	0.226	5.030	0.226	5.030
C2-Naphthalenes	0.221	4.931	0.226	5.030	0.226	5.030	0.226	5.030
C3-Naphthalenes	0.221	4.931	0.226	5.030	0.226	5.030	0.226	5.030
C4-Naphthalenes	0.221	4.931	0.226	5.030	0.226	5,030	0.226	5.030
Fluorene	0.507	4.931	0.517	5.030	0.517	5.030	0.517	5.030
C1-Fluorenes	0.507	4.931	0.517	5.030	0.517	5.030	0.517	5.030
C2-Fluorenes	0.507	4.931	0.517	5.030	0.517	5.030	0.517	5.030
C3- Fluorenes	0.507	4.931	0.517	5.030	0.517	5.030	0.517	5.030
Dibenzothiophene	0.650	4.931	0.663	5.030	0.663	5.030	0.663	5.030
C1-Dibenzothiophenes	0.650	4.931	0.663	5.030	0.663	5.030	0.663	5.030
C2-Dibenzothiophenes	0.650	4.931	0.663	5.030	0.663	5.030	0.663	5.030
C3- Dibenzothiophenes	0.650	4.931	0.663	5.030	0.663	5.030	0.663	5.030
Phenanthrene	0.378	4.931	0.385	5.030	0.385	5.030	0.385	5.030
C1-Phenanthrenes	0.378	4.931	0.385	5.030	0.385	5.030	0.385	5.030
C2-Phenanthrenes	0.378	4.931	0.385	5.030	0.385	5.030	0.385	5.030
C3-Phenanthrenes	0.378	4.931	0.385	5.030	0.385	5.030	0.385	5.030
C4-Phenanthrenes	0.378	4.931	0.385	5.030	0.385	5.030	0.385	5.030
Anthracene	0.393	4.931	0.400	5.030	0.400	5.030	0.400	5.030
Fluoranthene	0.673	4.931	0.687	5.030	0.687	5.030	0.687	5.030
Pyrene	0.798	4.931	0.814	5.030	0.814	5.030	0.814	5.030
C1- Pyrenes	0.798	4.931	0.814	5.030	0.814	5.030	0.814	5.030
C2- Pyrenes	0.798	4.931	0.814	5.030	0.814	5.030	0.814	
C3- Pyrenes	0.798	4.931	0.814	5.030	0.814	5.030	0.814	5.030 5.030
C4- Pyrenes	0.798	4.931	0.814	5.030	0.814	5.030	0.814	5.030
Naphthobenzothiophene	0.650	4.931	0.663	5.030	0.663	5.030	0.663	5.030
C-1 Naphthobenzothiophenes	0.650	4.931	0.663	5.030	0.663	5.030	0.663	5.030
C-2 Naphthobenzothiophenes	0.650	4.931	0.663	5.030	0.663	5.030	0.663	5.030
C-3 Naphthobenzothiophenes	0.650	4.931	0.663	5.030	0.663	5.030	0.663	5.030
Benzo (a) Anthracene	1.083	4.931	1.105	5.030	1.105	5.030	1.105	5.030
Chrysene	1.083	4.931	1.105	5.030	1.105	5.030	1.105	5.030
C1- Chrysenes	1.083	4.931	1.105	5.030	1.105	5.030	1.105	5.030
C2- Chrysenes	1.083	4.931	1.105	5.030	1.105	5.030	1.105	5.030
C3- Chrysenes	1.083	4.931	1.105	5.030	1.105	5.030	1.105	5.030
C4- Chrysenes	1.083	4.931	1.105	5.030	1.105	5.030	1.105	
Benzo (b) Fluoranthene	0.741	4.931	0.756	5.030	0.756	5.030	0.756	5.030 5.030
Benzo (k) Fluoranthene	0.696	4.931	0.710	5.030	0.736	5.030	0.756	5.030
Benzo (e) Pyrene	0.995	4.931	1.015	5.030	1.015	5.030	1.015	5.030
Benzo (a) Pyrene	0.831	4.931	0.848	5.030	0.848	5.030	0.848	5.030
Perylene	0.264	4.931	0.270	5.030	0.848	5.030		
Indeno (1,2,3 - cd) Pyrene	1.933	4.931	1.972	5.030	1.972		0.270	5.030
Dibenzo (a,h) anthracene	1.687	4.931	1.721	5.030	1.721	5.030 5.030	1.972	5.030 5.030
Benzo (g,h,i) perylene	2.175	4.931	2.219	5.030	2.219	5.030	1.721 2.219	5.030
Delize (g,n,i) peryiene	2.175	7.001	2.213	5.050	2.213	3.030	2.219	5.030

## Louisiana State University **Department of Environmental Sciences** Response & Chemical Assessment Team

Project Client:

Project Name:

St. Croix Spill

·	,			
Client ID	3523839-001 PS	3523840-001 PS	3523840-002 PS	3523841-001 PS
RCAT ID	2010355-38	2010355-39	2010355-40	2010355-41
Sample Matrix	Water	Water	Water	Water
Analytical Instrument	Mustang	Mustang	Mustang	Mustang
% Moisture	0	0	0	0
% Lipid				
Sample Size	1050	1034	1023	1053
Sample Unit-Basis	ml	ml	ml	ml
Units	ug/L	ug/L	ug/L	ug/L
nC-10 Decane	U	U	U	U
nC-11 Undecane	U	U	U	U
nC-12 Dodecane	U	U	U	U
nC-13 Tridecane	U	U	U	U
nC-14 Tetradecane	U	U	U	U
nC-15 Pentadecane	U	U	U	U
nC-16 Hexadecane	U	U	U	U
nC-17 Heptadecane	U	U	U	U
Pristane	U	U	U	U
nC-18 Octadecane	U	υ	U	U
Phytane	U	U	U	U
nC-19 Nonadecane	U	U	U	U
nC-20 Eicosane	U	U	U	U
nC-21 Heneicosane	U	U	U	U
nC-22 Docosane	U	U	U	U
nC-23 Tricosane	U	U	0.044 J	U
nC-24 Tetracosane	U	U	U	U
nC-25 Pentacosane	U	U	U	U
nC-26 Hexacosane	U	U	U	U
nC-27 Heptacosane	0.134 J	U	U	U
nC-28 Octacosane	U	U	U	U
nC-29 Nonacosane	U	U	0.177 J	U
nC-30 Triacontane	U	U	U	U
nC-31 Hentriacontane	U	U	0.117 J	U
nC-32 Dotriacontane	U	U	U	U
nC-33 Tritriacontane	U	U	U	U
nC-34 Tetratriacontane	U	U	U	U
nC-35 Pentatriacontane	U	U	U	U
Total Alkanes	0.134	0.000	0.339	0.000

Surrogate Recovery (%)		***************************************	· · · · · · · · · · · · · · · · · · ·	
5 Alpha Androstane	0	0	0	0

## Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Client:	Hovensa			
Project Name:	St. Croix Spill			
Client ID	3523839-001 PS	3523840-001 PS	3523840-002 PS	3523841-001 PS
RCAT ID	2010355-38	2010355-39	2010355-40	2010355-41
Sample Matrix	Water	Water	Water	Water
Analytical Instrument	Mustang	Mustang	Mustang	Mustang
% Moisture	0	0	0	0
% Lipid	0	0	0	0
Sample Size	1050	1034	1023	1053
Sample Unit-Basis	ml	ml	ml	ml
Units	ng/L	ng/L	ng/L	ng/L
Naphthalene	U	U	U	U
C1-Naphthalenes	U	U	U	U
C2-Naphthalenes	U	U	U	U
C3-Naphthalenes C4-Naphthalenes	U U	U U	U U	U U
Fluorene	Ü	U	Ü	U
C1-Fluorenes	Ū	Ū	Ü	Ü
C2-Fluorenes	U	U	U	Ū
C3- Fluorenes	U	U	U	U
Dibenzothiophene C1-Dibenzothiophenes	U U	U U	U	U
C2-Dibenzothiophenes	Ü	Ü	U U	U
C3- Dibenzothiophenes	Ū	Ü	Ü	Ü
Phenanthrene	U	U	U	Ū
C1-Phenanthrenes	Ü	U	U	U
C2-Phenanthrenes C3-Phenanthrenes	U U	U U	Ü	U
C4-Phenanthrenes	Ü	Ŭ	U U	U U
Anthracene	Ū	Ü	Ŭ	Ü
Fluoranthene	U	U	U	Ū
Pyrene	U	U	U	U
C1- Pyrenes C2- Pyrenes	U U	U U	U	U
C3- Pyrenes	Ü	Ü	U U	U U
C4- Pyrenes	Ŭ	Ü	Ü	Ü
Naphthobenzothiophene	U	U	U	Ū
C-1 Naphthobenzothiophenes	U	U	U	U
C-2 Naphthobenzothiophenes C-3 Naphthobenzothiophenes	U U	U U	U	U
Benzo (a) Anthracene	Ü	Ü	U	U U
Chrysene	U	Ū	Ü	Ü
C1- Chrysenes	U	U	U	U
C2- Chrysenes	U	U	U	U
C3- Chrysenes C4- Chrysenes	U U	บ บ	U U	U
Benzo (b) Fluoranthene	Ü	ŭ	Ü	U U
Benzo (k) Fluoranthene	Ū	Ū	Ü	Ü
Benzo (e) Pyrene	U	U	U	U
Benzo (a) Pyrene Perylene	U	U	1.61 J	U
Indeno (1,2,3 - cd) Pyrene	U U	U U	U	U U
Dibenzo (a,h) anthracene	ŭ	Ü	ŭ	U
Benzo (g,h,i) perylene	U	Ü	∕ Ū	Ü
Total Aromatics	0.000	0.000	0,960	0.000
			1.6	
% Surrogate Recovery				
Phenanthrene d-10	0	0	0	0

#### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Name:	St. Croix Spill							
Client ID	352383	89-001 PS	352384	10-001 PS	352384	10-002 PS	352384	1-001 PS
RCAT ID	2010	355-38	2010	355-39	2010	355-40	2010	355-41
Sample Matrix	W	ater	w	ater	w	ater	w	ater
Analytical Instrument	Mu	stang	Mu	stang	Mu	stang	Mu	stang
% Moisture		0		0		0		0
% Lipid		0		0		0		0
Sample Size	1	050	10	034	1:	023	10	053
Sample Unit-Basis	į	ml		ml	1	mi	1	nl
Units	u	g/L	u	g/L	u	g/L	u	g/L
	MDL	RQL	MDL	RQL	MDL	RQL	MDL	RQL
nC-10 Decane	0.016	0.952	0.016	0.967	0.017	0.978	0.016	0.950
nC-11 Undecane	0.012	0.952	0.012	0.967	0.013	0.978	0.012	0.950
nC-12 Dodecane	0.014	0.952	0.014	0.967	0.014	0.978	0.014	0.950
nC-13 Tridecane	0.011	0.952	0.011	0.967	0.011	0.978	0.011	0.950
nC-14 Tetradecane	0.026	0.952	0.026	0.967	0.027	0.978	0.026	0.950
nC-15 Pentadecane	0.023	0.952	0.023	0.967	0.023	0.978	0.023	0.950
nC-16 Hexadecane	0.021	0.952	0.022	0.967	0.022	0.978	0.021	0.950
nC-17 Heptadecane	0.046	0.952	0.046	0.967	0.047	0.978	0.046	0.950
Pristane	0.044	0.952	0.045	0.967	0.045	0.978	0.044	0.950
nC-18 Octadecane	0.067	0.952	0.068	0.967	0.069	0.978	0.067	0.950
Phytane	0.069	0.952	0.070	0.967	0.071	0.978	0.069	0.950
nC-19 Nonadecane	0.038	0.952	0.038	0.967	0.039	0.978	0.037	0.950
nC-20 Eicosane	0.039	0.952	0.040	0.967	0.041	0.978	0.039	0.950
nC-21 Heneicosane	0.033	0.952	0.033	0.967	0.034	0.978	0.033	0.950
nC-22 Docosane	0.066	0.952	0.067	0.967	0.068	0.978	0.066	0.950
nC-23 Tricosane	0.037	0.952	0.038	0.967	0.038	0.978	0.037	0.950
nC-24 Tetracosane	0.059	0.952	0.060	0.967	0.060	0.978	0.058	0.950
nC-25 Pentacosane	0.186	0.952	0.188	0.967	0.190	0.978	0.185	0.950
nC-26 Hexacosane	0.157	0.952	0.159	0.967	0.161	0.978	0.157	0.950
nC-27 Heptacosane	0.124	0.952	0.126	0.967	0.127	0.978	0.124	0.950
nC-28 Octacosane	0.199	0.952	0.202	0.967	0.204	0.978	0.198	0.950
nC-29 Nonacosane	0.150	0.952	0.152	0.967	0.153	0.978	0.149	0.950
nC-30 Triacontane	0.083	0.952	0.084	0.967	0.085	0.978	0.082	0.950
nC-31 Hentriacontane	0.084	0.952	0.085	0.967	0.086	0.978	0.084	0.950
nC-32 Dotriacontane	0.048	0.952	0.049	0.967	0.049	0.978	0.048	0.950
nC-33 Tritriacontane	0.070	0.952	0.071	0.967	0.072	0.978	0.070	0.950
nC-34 Tetratriacontane	0.069	0.952	0.070	0.967	0.071	0.978	0.069	0.950
nC-35 Pentatriacontane	0.034	0.952	0.035	0.967	0.035	0.978	0.034	0.950

## Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Troject Wallie.	St. Croix Spin							
Client ID	352383	39-001 PS	352384	10-001 PS	352384	10-002 PS	352384	11-001 PS
RCAT ID	2010	355-38	2010	355-39	2010	355-40	2010	355-41
Sample Matrix	w	ater	\\	ater	14.	ater		ater
Analytical Instrument								
		stang -		stang	Mu	stang		stang
% Moisture		0		0		0		0
% Lipid		0		0		0		0
Sample Size	10	050	10	034	1	023	1	053
Sample Unit-Basis	,	ml		ml		ml		ml
Units	n	g/L		g/L		g/L		g/L
	MDL	RQL	MDL	RQL	MDL	RQL	MDL	RQL
Naphthalene	0.226	5.030	0.226	5.030	0.226	5.030	0.226	5.030
C1-Naphthalenes	0.226	5.030	0.226	5.030	0.226	5.030	0.226	5.030
C2-Naphthalenes	0.226	5.030	0.226	5.030	0.226	5.030	0.226	5.030
C3-Naphthalenes	0.226	5.030	0.226	5.030	0.226	5.030	0.226	5.030
C4-Naphthalenes	0.226	5.030	0.226	5.030	0.226	5.030	0.226	5.030
Fluorene	0.517	5.030	0.517	5.030	0.517	5.030	0.517	5.030
C1-Fluorenes	0.517	5.030	0.517	5.030	0.517	5.030	0.517	5.030
C2-Fluorenes	0.517	5.030	0.517	5.030	0.517	5.030	0.517	5.030
C3- Fluorenes	0.517	5.030	0.517	5.030	0.517	5.030	0.517	5.030
Dibenzothiophene	0.663	5.030	0.663	5.030	0.663	5.030	0.663	5.030
C1-Dibenzothiophenes	0.663	5.030	0.663	5.030	0.663	5.030	0.663	5.030
C2-Dibenzothiophenes	0.663	5.030	0.663	5.030	0.663	5.030	0.663	5.030
C3- Dibenzothiophenes	0.663	5.030	0.663	5.030	0.663	5.030	0.663	5.030
Phenanthrene	0.385	5.030	0.385	5.030	0.385	5.030	0.385	5.030
C1-Phenanthrenes	0.385	5.030	0.385	5.030	0.385	5.030	0.385	5.030
C2-Phenanthrenes	0.385	5.030	0.385	5.030	0.385	5.030	0.385	5.030
C3-Phenanthrenes	0.385	5.030	0.385	5.030	0.385	5.030	0.385	5.030
C4-Phenanthrenes	0.385	5.030	0.385	5.030	0.385	5.030	0.385	5.030
Anthracene	0.400	5.030	0.400	5.030	0.400	5.030	0.400	5.030
Fluoranthene	0.687	5.030	0.687	5.030	0.687	5.030	0.687	5.030
Pyrene	0.814	5.030	0.814	5.030	0.814	5.030	0.814	5.030
C1- Pyrenes	0.814	5.030	0.814	5.030	0.814	5.030	0.814	5.030
C2- Pyrenes	0.814	5.030	0.814	5.030	0.814	5.030	0.814	5.030
C3- Pyrenes	0.814	5.030	0.814	5.030	0.814	5.030	0.814	5.030
C4- Pyrenes	0.814	5.030	0.814	5.030	0.814	5.030	0.814	5.030
Naphthobenzothiophene	0.663	5.030	0.663	5.030	0.663	5.030	0.663	5.030
C-1 Naphthobenzothiophenes	0.663	5.030	0.663	5.030	0.663	5.030	0.663	5.030
C-2 Naphthobenzothiophenes	0.663	5.030	0.663	5.030	0.663	5.030	0.663	5.030
C-3 Naphthobenzothiophenes	0.663	5.030	0.663	5.030	0.663	5.030	0.663	5.030
Benzo (a) Anthracene	1.105	5.030	1.105	5.030	1.105	5.030	1.105	5.030
Chrysen <b>e</b>	1.105	5.030	1.105	5.030	1.105	5.030	1.105	5.030
C1- Chrysenes	1.105	5.030	1.105	5.030	1.105	5.030	1.105	5.030
C2- Chrysenes	1.105	5.030	1.105	5.030	1.105	5.030	1.105	5.030
C3- Chrysenes	1.105	5.030	1.105	5.030	1.105	5.030	1.105	5.030
C4- Chrysenes	1.105	5.030	1.105	5.030	1.105	5.030	1.105	5.030
Benzo (b) Fluoranthene	0.756	5.030	0.756	5.030	0.756	5.030	0.756	5.030
Benzo (k) Fluoranthene	0.710	5.030	0.710	5.030	0.710	5.030	0.710	5.030
Benzo (e) Pyrene	1.015	5.030	1.015	5.030	1.015	5.030	1.015	5.030
Benzo (a) Pyrene	0.848	5.030	0.848	5.030	0.848	5.030	0.848	5.030
Perylene	0.270	5.030	0.270	5.030	0.270	5.030	0.270	5.030
Indeno (1,2,3 - cd) Pyrene	1.972	5.030	1.972	5.030	1.972	5.030	1.972	5.030
Dibenzo (a,h) anthracene	1.721	5.030	1.721	5.030	1.721	5.030	1.721	5.030
Benzo (g,h,i) perylene	2.219	5.030	2.219	5.030	2.219	5.030	2.219	5.030

#### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Client:

Hovensa

Project Name: St. Croix Spill

Client ID	3523842-001 PS	3523843-001 PS	3523844-001 PS	3523845-001 PS
RCAT ID	2010355-42	2010355-43	2010355-44	2010355-45
Sample Matrix	Water	Water	Water	Water
Analytical Instrument	Mustang	Mustang	Mustang	Mustang
% Moisture	0	0	0	0
% Lipid				
Sample Size	1053	1048	1049	1047
Sample Unit-Basis	ml	ml	ml	ml
Units	ug/L	ug/L	ug/L	ug/L
nC-10 Decane	U	U	U	U
nC-11 Undecane	Ü	Ü	Ü	Ü
nC-12 Dodecane	Ü	Ū <sup>*</sup>	Ü	Ü
nC-13 Tridecane	U	Ü	U	Ü
nC-14 Tetradecane	U	Ū	U	U
nC-15 Pentadecane	U	Ü	Ü	U
nC-16 Hexadecane	U	0.033 J	Ü	U
nC-17 Heptadecane	U	U	U	U
Pristane	U	U	Ü	U
nC-18 Octadecane	U	U	Ū	U
Phytane	U	U	Ü	U
nC-19 Nonadecane	U	U	Ū	Ü
nC-20 Eicosane	U	U	Ü	Ü
nC-21 Heneicosane	U	0.056 J	0.063 J	Ü
nC-22 Docosane	U	U	U	Ü
nC-23 Tricosane	0.038 J	U	0.039 J	Ü
nC-24 Tetracosane	U	0.113 J	0.086 J	0.066 J
nC-25 Pentacosane	U	0.258 J	U	U
nC-26 Hexacosane	U	U	U	Ü
nC-27 Heptacosane	U	U	U	U
nC-28 Octacosane	U	U	U	U
nC-29 Nonacosane	U	U	U	U
nC-30 Triacontane	U	U	U	U
nC-31 Hentriacontane	U	U	U	U
nC-32 Dotriacontane	U	U	U	U
nC-33 Tritriacontane	U	U	Ü	U
nC-34 Tetratriacontane	U	U	Ü	Ü
nC-35 Pentatriacontane	U	U	U	U
Total Alkanes	0.038	0.460	0.188	0.066

Surrogate Recovery (%)				
5 Alpha Androstane	0	0	0	0

## Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Client:

Hovensa

Project Name:

St. Croix Spill

Froject Name.	St. Croix Spiri			
Client ID	3523842-001 PS	3523843-001 PS	3523844-001 PS	3523845-001 PS
RCAT ID	2010355-42	2010355-43	2010355-44	2010355-45
Sample Matrix	Water	Water	Water	Water
Analytical Instrument	Mustang	Mustang	Mustang	
% Moisture	0	0	•	Mustang
% Lipid			0	0
	0.000	0	0	0
Sample Size	1053	1048	1049	1047
Sample Unit-Basis	m!	ml	ml	ml
Units	ng/L	ng/L	ng/L	ng/L
Naphthalene	U	U	U	U
C1-Naphthalenes	Ü	Ü	Ŭ	U
C2-Naphthalenes	Ü	Ŭ	Ü	Ü
C3-Naphthalenes	U	Ū	0.306 J	ŭ
C4-Naphthalenes	U	Ū	U	Ŭ
Fluorene	U	ū	Ü	Ŭ
C1-Fluorenes	U	Ū	Ŭ	Ü
C2-Fluorenes	Ü	ŭ	Ŭ	Ü
C3- Fluorenes	U	Ū	Ü	Ŭ
Dibenzothiophene	Ū	Ü	ŭ	Ü
C1-Dibenzothiophenes	Ū	Ü	Ü	Ü
C2-Dibenzothiophenes	Ü	Ŭ	Ü	Ü
C3- Dibenzothiophenes	U	Ū	Ü	Ŭ
Phenanthrene	U	Ū	Ü	Ŭ
C1-Phenanthrenes	U	Ū	Ü	Ü
C2-Phenanthrenes	U	Ū	Ü	ŭ
C3-Phenanthrenes	U	Ū	Ü	Ü
C4-Phenanthrenes	U	U	Ü	Ŭ
Anthracene	U	U	Ü	ŭ
Fluoranthene	U	U	Ū	ŭ
Pyrene	U	Ū	Ü	Ŭ
C1- Pyrenes	U	U	Ū	ŭ
C2- Pyrenes	U	U	Ū	Ū
C3- Pyrenes	U	U	Ū	Ū
C4- Pyrenes	U	U	Ū	Ü
Naphthobenzothiophene	U	U	Ü	Ü
C-1 Naphthobenzothiophenes	U	U	U	Ū
C-2 Naphthobenzothiophenes	U	U	U	Ū
C-3 Naphthobenzothiophenes	U	U	U	Ū
Benzo (a) Anthracene	U	U	U	Ū
Chrysene	U	U	U	Ŭ
C1- Chrysenes	U	U	U	Ū
C2- Chrysenes	U	Ŭ	U	Ū
C3- Chrysenes	U	U	U	U
C4- Chrysenes	U	U	U	U
Benzo (b) Fluoranthene	U	U	U	U
Benzo (k) Fluoranthene	U	U	U	Ū
Benzo (e) Pyrene	U	U	U	Ü
Benzo (a) Pyrene	U	U	U	Ū
Perylene	U	U	U	U
Indeno (1,2,3 - cd) Pyrene	U	U	U	Ū
Dibenzo (a,h) anthracene	U	U	U	Ū
Benzo (g,h,i) perylene	U	U	U	Ū
Total Aromatics	0.000	0.000	0.306	0.000

% Surrogate Recovery			******	
Phenanthrene d-10	0	0	0	0

## Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Name:	St. Croix Spill							
Client ID	352384	12-001 PS	352384	13-001 PS	352384	44-001 PS	352384	5-001 PS
RCAT ID	2010	355-42	2010	355-43	2010	355-44	2010	355-45
Sample Matrix	w	ater	w	ater	w	ater	W	ater
Analytical Instrument	Mu	stang	Mu	stang	Mu	stang	Mus	stang
% Moisture		0		0		0		0
% Lipid		0		0		0		0
Sample Size	10	053	10	048	10	049	10	047
Sample Unit-Basis	1	ml	r	ml		ml	r	nl
Units	u	g/L	u	g/L	u	g/L	U)	g/L
	MDL	RQL	MDL	RQL	MDL	RQL	MDL	RQL
nC-10 Decane	0.016	0.950	0.016	0.954	0.016	0.953	0.016	0.955
nC-11 Undecane	0.012	0.953	0.012	0.954	0.012	0.953	0.012	0.955
nC-12 Dodecane	0.014	0.953	0.014	0.954	0.014	0.953	0.014	0.955
nC-13 Tridecane	0.011	0.953	0.011	0.954	0.011	0.953	0.011	0.955
nC-14 Tetradecane	0.026	0.953	0.026	0.954	0.026	0.953	0.026	0.955
nC-15 Pentadecane	0.023	0.953	0.023	0.954	0.023	0.953	0.023	0.955
nC-16 Hexadecane	0.021	0.953	0.021	0.954	0.021	0.953	0.021	0.955
nC-17 Heptadecane	0.046	0.953	0.046	0.954	0.046	0.953	0.046	0.955
Pristane	0.044	0.953	0.044	0.954	0.044	0.953	0.044	0.955
nC-18 Octadecane	0.067	0.953	0.067	0.954	0.067	0.953	0.067	0.955
Phytane	0.069	0.953	0.069	0.954	0.069	0.953	0.069	0.955
nC-19 Nonadecane	0.038	0.953	0.038	0.954	0.038	0.953	0.038	0.955
nC-20 Eicosane	0.040	0.953	0.040	0.954	0.040	0.953	0.040	0.955
nC-21 Heneicosane	0.033	0.953	0.033	0.954	0.033	0.953	0.033	0.955
nC-22 Docosane	0.066	0.953	0.066	0.954	0.066	0.953	0.066	0.955
nC-23 Tricosane	0.037	0.953	0.037	0.954	0.037	0.953	0.037	0.955
nC-24 Tetracosane	0.059	0.953	0.059	0.954	0.059	0.953	0.059	0.955
nC-25 Pentacosane	0.186	0.953	0.186	0.954	0.186	0.953	0.186	0.955
nC-26 Hexacosane	0.157	0.953	0.157	0.954	0.157	0.953	0.157	0.955
nC-27 Heptacosane	0.124	0.953	0.124	0.954	0.124	0.953	0.124	0.955
nC-28 Octacosane	0.199	0.953	0.199	0.954	0.199	0.953	0.199	0.955
nC-29 Nonacosane	0.150	0.953	0.150	0.954	0.150	0.953	0.150	0.955
nC-30 Triacontane	0.083	0.953	0.083	0.954	0.083	0.953	0.083	0.955
nC-31 Hentriacontane	0.084	0.953	0.084	0.954	0.084	0.953	0.084	0.955
nC-32 Dotriacontane	0.048	0.953	0.048	0.954	0.048	0.953	0.048	0.955
nC-33 Tritriacontane	0.070	0.953	0.071	0.954	0.070	0.953	0.071	0.955
nC-34 Tetratriacontane	0.069	0.953	0.069	0.954	0.069	0.953	0.069	0.955
nC-35 Pentatriacontane	0.034	0.953	0.034	0.954	0.034	0.953	0.034	0.955

## Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Client ID	35238	42-001 PS	352384	43-001 PS	35238	14-001 PS	352384	\$5-001 PS
RCAT ID	2010	355-42	2010	355-43	2010	355-44	2010	355-45
Sample Matrix	W	/ater	w	ater		ater		ater
Analytical Instrument		stang						
	IVIC	-		stang	Mu	stang	Mu	stang
% Moisture		0		0		0		0
% Lipid		0		0		0		0
Sample Size	1	053	1	048	1	049	10	047
Sample Unit-Basis		ml		ml		mi		ml
Units	п	g/L	n	g/L		g/L		 g/L
	MDL	RQL	MDL	RQL	MDL	RQL	MDL	RQL
Naphthalene	0.213	4.748	0.214	4.771	0.214	4.771	0.214	4.771
C1-Naphthalenes	0.213	4.748	0.214	4.771	0.214	4.771	0.214	4,771
C2-Naphthalenes	0.213	4.748	0.214	4.771	0.214	4.771	0.214	4.771
C3-Naphthalenes	0.213	4.748	0.214	4.771	0.214	4.771	0.214	4.771
C4-Naphthalenes	0.213	4.748	0.214	4.771	0.214	4.771	0.214	4.771
Fluorene	0.488	4.748	0.491	4.771	0.491	4.771	0.491	4.771
C1-Fluorenes	0.488	4.748	0.491	4.771	0.491	4.771	0.491	4.771
C2-Fluorenes	0.488	4.748	0.491	4.771	0.491	4.771	0.491	4.771
C3- Fluorenes	0.488	4.748	0.491	4.771	0.491	4.771	0.491	4.771
Dibenzothiophene	0.626	4.748	0.629	4.771	0.629	4.771	0.629	4.771
C1-Dibenzothiophenes	0.626	4.748	0.629	4.771	0.629	4.771	0.629	4.771
C2-Dibenzothiophenes	0.626	4.748	0.629	4.771	0.629	4.771	0.629	4.771
C3- Dibenzothiophenes	0.626	4.748	0.629	4.771	0.629	4.771	0.629	4.771
Phenanthrene C4 Phenanthrene	0.364	4.748	0.365	4.771	0.365	4.771	0.365	4.771
C1-Phenanthrenes C2-Phenanthrenes	0.364	4.748	0.365	4.771	0.365	4.771	0.365	4.771
C3-Phenanthrenes	0.364	4.748	0.365	4.771	0.365	4.771	0.365	4.771
C4-Phenanthrenes	0.364 0.364	4.748	0.365	4.771	0.365	4.771	0.365	4.771
Anthracene	0.364	4.748	0.365	4.771	0.365	4.771	0.365	4.771
Fluoranthene	0.648	4.748 4.748	0.380	4.771	0.380	4.771	0.380	4.771
Pyrene	0.768	4.748	0.651 0.772	4.771 4.771	0.651	4.771	0.651	4.771
C1- Pyrenes	0.768	4.748	0.772	4.771	0.772	4.771	0.772	4.771
C2- Pyrenes	0.768	4.748	0.772	4.771	0.772 0.772	4.771 4.771	0.772	4.771
C3- Pyrenes	0.768	4.748	0.772	4.771	0.772	4.771	0.772 0.772	4.771
C4- Pyrenes	0.768	4.748	0.772	4.771	0.772	4.771	0.772	4.771
Naphthobenzothiophene	0.626	4.748	0.629	4.771	0.629	4.771	0.629	4.771 4.771
C-1 Naphthobenzothiophenes	0.626	4.748	0.629	4.771	0.629	4.771	0.629	4.771
C-2 Naphthobenzothiophenes	0.626	4.748	0.629	4,771	0.629	4.771	0.629	4.771
C-3 Naphthobenzothiophenes	0.626	4.748	0.629	4.771	0.629	4.771	0.629	4.771
Benzo (a) Anthracene	1.043	4.748	1.048	4.771	1.048	4.771	1.048	4.771
Chrysene	1.043	4.748	1.048	4.771	1.048	4.771	1.048	4.771
C1- Chrysenes	1.043	4.748	1.048	4.771	1.048	4.771	1.048	4.771
C2- Chrysenes	1.043	4.748	1.048	4.771	1.048	4.771	1.048	4.771
C3- Chrysenes	1.043	4.748	1.048	4.771	1.048	4.771	1.048	4.771
C4- Chrysenes	1.043	4.748	1.048	4.771	1.048	4.771	1.048	4.771
Benzo (b) Fluoranthene	0.713	4.748	0.717	4.771	0.717	4.771	0.717	4.771
Benzo (k) Fluoranthene	0.670	4.748	0.673	4.771	0.673	4.771	0.673	4.771
Benzo (e) Pyrene	0.959	4.748	0.963	4.771	0.963	4.771	0.963	4.771
Benzo (a) Pyrene	0.801	4.748	0.804	4.771	0.804	4.771	0.804	4.771
Perylene	0.255	4.748	0.256	4.771	0.256	4.771	0.256	4.771
Indeno (1,2,3 - cd) Pyrene	1.861	4.748	1.870	4.771	1.870	4.771	1.870	4.771
Dibenzo (a,h) anthracene	1.625	4.748	1.632	4.771	1.632	4.771	1.632	4.771
Benzo (g,h,i) perylene	2.095	4.748	2.105	4.771	2.105	4.771	2.105	4.771

#### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Client:

Hovensa

Project Name:

St. Croix Spill

Client ID	3523846-001 PS	152912 BLANK	152913 LCS	152914 LCSD
RCAT ID	2010355-46	2010355-47	2010355-48	2010355-49
Sample Matrix	Water	Water	Water	Water
Analytical Instrument	Mustang	Mustang	Mustang	Mustang
% Moisture	0	0	0	0
% Lipid				
Sample Size	1049	1000	1000	1000
Sample Unit-Basis	ml	ml	ml	ml
Units	ug/L	ug/L	ug/L	ug/L
nC-10 Decane	U	U	U	U
nC-11 Undecane	U	U	U	U
nC-12 Dodecane	U	U	U	U
nC-13 Tridecane	U	U	U	U
nC-14 Tetradecane	U	U	U	U
nC-15 Pentadecane	U	U	υ	U
nC-16 Hexadecane	U	U	u	U
nC-17 Heptadecane	U	U	U	U
Pristane	U	U	U	U
nC-18 Octadecane	U	U	U	U
Phytane	U	u	U	U
nC-19 Nonadecane	U	u	U	U
nC-20 Eicosane	U	u	U	U
nC-21 Heneicosane	U	U	U	U
nC-22 Docosane	U	U	U	U
nC-23 Tricosane	U	U	U	U
nC-24 Tetracosane	U	υ	U	U
nC-25 Pentacosane	U	U	U	U
nC-26 Hexacosane	U	U	U	U
nC-27 Heptacosane	U	U	U	U
nC-28 Octacosane	U	U	U	U
nC-29 Nonacosane	U	U	U	U
nC-30 Triacontane	U	U	U	U
nC-31 Hentriacontane	U	U	U	U
nC-32 Dotriacontane	υ	U	U	U
nC-33 Tritriacontane	U	U	U	U
nC-34 Tetratriacontane	U	U	U	U
nC-35 Pentatriacontane	U	U	U	U
Total Alkanes	0.000	0.000	0.000	0.000

Surrogate Recovery (%)				
5 Alpha Androstane	0	0	0	0

#### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Client:

Hovensa

Project Name:

St. Croix Spill

Client ID  RCAT ID  Sample Matrix  Analytical Instrument  % Moisture  % Lipid  Sample Size  Sample Unit-Basis	3523846-001 PS  2010355-46  Water  Mustang  0  1049  ml  ng/L	152912 BLANK  2010355-47  Water  Mustang  0  1000  ml  ng/L	152913 LCS  2010355-48  Water  Mustang  0  0  1000  ml	152914 LCSD  2010355-49  Water  Mustang  0  0  1000
Sample Matrix Analytical Instrument % Moisture % Lipid Sample Size	Water Mustang 0 0 1049 ml	Water Mustang 0 0 1000 ml	Water Mustang O O 1000	Water Mustang O O
Analytical Instrument % Moisture % Lipid Sample Size	Mustang 0 0 1049 ml	Mustang 0 0 1000 ml	Mustang 0 0 1000	Mustang 0 0
Analytical Instrument % Moisture % Lipid Sample Size	Mustang 0 0 1049 ml	Mustang 0 0 1000 ml	Mustang 0 0 1000	Mustang 0 0
% Moisture % Lipid Sample Size	0 0 1049 ml	0 0 1000 ml	0 0 1000	0
% Lipid Sample Size	0 1049 ml	0 1000 ml	0 1000	0
Sample Size	1049 ml	1000 ml	1000	
·	ml	ml		1000
Sample Unit-Basis			ml	
	ng/L	ng/L		ml
Units		₹*	ng/L	ng/L
Naphthalene	U	U	2230	2300
C1-Naphthalenes	U	· U	U	U
C2-Naphthalenes	U	U	U	U
C3-Naphthalenes	U	U	U	U
C4-Naphthalenes	U	U	U	U
Fluorene	U	U	2800	2770
C1-Fluorenes	U	U	U	U
C2-Fluorenes	U	U	U	U
C3- Fluorenes	U	U	U	U
Dibenzothiophene	U	U	U	U
C1-Dibenzothiophenes	U	U	U	U
C2-Dibenzothiophenes	U	U	U	U
C3- Dibenzothiophenes	U	U	U	U
Phenanthrene	U	U	2490	2420
C1-Phenanthrenes	U	U	U	U
C2-Phenanthrenes	U	U	U	U
C3-Phenanthrenes	U	U	U	U
C4-Phenanthrenes	U	U	U	U
Anthracene	U	Ŭ	2950	2920
Fluoranthene	U	Ŭ	3950	3810
Pyrene	U	Ŭ	3930	3770
C1- Pyrenes	U	U	U	U
C2- Pyrenes	U	U	U	U
C3- Pyrenes	U	U	U	U
C4- Pyrenes	U	U	U	U
Naphthobenzothiophene	U	U	U	U
C-1 Naphthobenzothiophenes	U	U	U	U
C-2 Naphthobenzothiophenes	U U	U	U U	U
C-3 Naphthobenzothiophenes	-	U	•	U
Benzo (a) Anthracene	U U	U U	3020	2740
Chrysene C1 Chrysens	U	U	3950 U	3460
C1- Chrysenes C2- Chrysenes	U	U	U	U U
· · · · · · · · · · · · · · · · · · ·	U	U	U	U
C3- Chrysenes C4- Chrysenes	U	U	Ü	U
Benzo (b) Fluoranthene	Ü	U	2620	2870
Benzo (k) Fluoranthene	Ü	ŭ	3430	3590
Benzo (e) Pyrene	ŭ	ŭ	3430 U	3590 U
Benzo (a) Pyrene	Ü	U	2550	2340
Perylene	Ŭ	ŭ	2550 U	2340 U
Indeno (1,2,3 - cd) Pyrene	Ü	Ü	1680	1620
Dibenzo (a,h) anthracene	Ü	Ü	1930	1920
Benzo (g,h,i) perylene	Ü	Ü	1720	1590
Total Aromatics	0.000	0.000	39300	38100

% Surrogate Recovery				
Phenanthrene d-10	0	0	0	0

## Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Name:	St. Croix Spill							
Client ID	352384	6-001 PS	15291	2 BLANK	1529	13 LCS	15291	4 LCSD
RCAT ID	2010	355-46	2010	355-47	2010	355-48	2010	355-49
Sample Matrix	W	ater	w	ater	W	ater	Wa	ater
Analytical Instrument	Mus	stang	Mu	stang	Mu	stang	Mus	stang
% Moisture		0		0		0	(	o
% Lipid		0		0		0		0
Sample Size	10	149	10	000	10	000	10	000
Sample Unit-Basis	г	nl	r	ml	r	ml	n	nl
Units	uį	g/L	u	g/L	uį	g/L	uį	g/L
	MDL	RQL	MDL	RQL	MDL	RQL	MDL	RQL
nC-10 Decane	0.016	0.953	0.017	1.000	0.017	1.000	0.017	1.000
nC-11 Undecane	0.012	0.953	0.013	1.000	0.013	1.000	0.013	1.000
nC-12 Dodecane	0.014	0.953	0.015	1.000	0.015	1.000	0.015	1.000
nC-13 Tridecane	0.011	0.953	0.011	1.000	0.011	1.000	0.011	1.000
nC-14 Tetradecane	0.026	0.953	0.027	1.000	0.027	1.000	0.027	1.000
nC-15 Pentadecane	0.023	0.953	0.024	1.000	0.024	1.000	0.024	1.000
nC-16 Hexadecane	0.021	0.953	0.022	1.000	0.022	1.000	0.022	1.000
nC-17 Heptadecane	0.046	0.953	0.048	1.000	0.048	1.000	0.048	1.000
Pristane	0.044	0.953	0.046	1.000	0.046	1.000	0.046	1.000
nC-18 Octadecane	0.067	0.953	0.070	1.000	0.070	1.000	0.070	1.000
Phytane	0.069	0.953	0.073	1.000	0.073	1.000	0.073	1.000
nC-19 Nonadecane	0.038	0.953	0.039	1.000	0.039	1.000	0.039	1.000
nC-20 Eicosane	0.040	0.953	0.041	1.000	0.041	1.000	0.041	1.000
nC-21 Heneicosane	0.033	0.953	0.034	1.000	0.034	1.000	0.034	1.000
nC-22 Docosane	0.066	0.953	0.070	1.000	0.070	1.000	0.070	1.000
nC-23 Tricosane	0.037	0.953	0.039	1.000	0.039	1.000	0.039	1.000
nC-24 Tetracosane	0.059	0.953	0.062	1.000	0.062	1.000	0.062	1.000
nC-25 Pentacosane	0.186	0.953	0.195	1.000	0.195	1.000	0.195	1.000
nC-26 Hexacosane	0.157	0.953	0.165	1.000	0.165	1.000	0.165	1.000
nC-27 Heptacosane	0.124	0.953	0.130	1.000	0.130	1.000	0.130	1.000
nC-28 Octacosane	0.199	0.953	0.208	1.000	0.208	1.000	0.208	1.000
nC-29 Nonacosane	0.150	0.953	0.157	1.000	0.157	1.000	0.157	1.000
nC-30 Triacontane	0.083	0.953	0.087	1.000	0.087	1.000	0.087	1.000
nC-31 Hentriacontane	0.084	0.953	0.088	1.000	0.088	1.000	0.088	1.000
nC-32 Dotriacontane	0.048	0.953	0.051	1.000	0.051	1.000	0.051	1.000
nC-33 Tritriacontane	0.070	0.953	0.074	1.000	0.074	1.000	0.074	1.000
nC-34 Tetratriacontane	0.069	0.953	0.073	1.000	0.073	1.000	0.073	1.000
nC-35 Pentatriacontane	0.034	0.953	0.036	1.000	0.036	1.000	0.036	1.000

# Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Clear ID	Project Name.	St. Croix Spili							
Sample Matrix   Mustang	Client ID	35238	46-001 PS	15291	2 BLANK	1529	13 LCS	15291	14 LCSD
Sample Martix	RCAT ID	2010	355-46	2010	355-47	2010	355-48	2010	355-49
Mustang	Sample Matrix	١٨.	later						
St. Moisture	,								
Supple   S	•	IVIU	ū		Ü		-	Mu	stang
Sample Size   1049   1000	% Moisture		0		0		0		0
Sample Unit-Basis	% Lipid		0		0		0		0
Sample Unit-Basis	Sample Size	1	049	10	000	10	000	10	000
Naphthalene	Sample Unit-Basis		ml	,	ml				
Mol.   Mol.   Mol.   Mol.   Mol.   Rol.	Units								
Naphthalene									
C1-Naphthalenes 0.214 4.771 0.491 4.771 0.629 4.771 0.	Naphthalene								-
C2-Naphthalenes         0.214         4.771         0.214         4.771         0.214         4.771         0.214         4.771         0.214         4.771         0.214         4.771         0.214         4.771         0.214         4.771         0.214         4.771         0.214         4.771         0.214         4.771         0.214         4.771         0.214         4.771         0.214         4.771         0.214         4.771         0.214         4.771         0.214         4.771         0.214         4.771         0.491         4.771         0.629         4.771         0.629	•								
C3-Naphthalenes         0.214         4.771         0.214         4.771         0.214         4.771         0.214         4.771         0.214         4.771         0.214         4.771         0.214         4.771         0.214         4.771         0.214         4.771         0.214         4.771         0.214         4.771         0.481         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.629	•								
C4-Naphthalenes         0.214         4.771         0.214         4.771         0.214         4.771         0.214         4.771         0.491         4.771         0.629	•								
Fluorene 0.491 4.771 0.629 4.771 0.365 4.771 0.372 4.771 0.772 4.7									
C1-Fluorenes 0.491 4.771 0.492 4.771 0.492 4.771 0.492 4.771 0.492 4.771 0.492 4.771 0.492 4.771 0.492 4.771 0.492 4.771 0.492 4.771 0.492 4.771 0.492 4.771 0.492 4.771 0.492 4.771 0.492 4.771 0.492 4.771 0.365	•								
C2-Flurenes 0.491 4.771 0.629 4.771 0.772 4.771 0.772									
C3- Fluorenes         0.491         4.771         0.491         4.771         0.491         4.771         0.491         4.771         0.481         4.771           Dibenzothiophene         0.629         4.771         0.365         4.771         0.365         4.771         0.365 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>									
Dibenzothiophene									
C1-Dibenzothiophenes 0.629 4.771 0.772 4.771 0.772 4.7									
C2-Dibenzothiophenes         0.629         4.771         0.629         4.771         0.629         4.771         0.629         4.771           C3- Dibenzothiophenes         0.629         4.771         0.629         4.771         0.365         4.771	•								
C3- Dibenzothiophenes         0.629         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.365<									
Phenanthrene         0.365         4.771         0.365									
C1-Phenanthrenes         0.365         4.771         0.365									
C2-Phenanthrenes 0.365 4.771 0.380 4.771 0.380 4.771 0.380 4.771 0.380 4.771 0.380 4.771 0.380 4.771 0.380 4.771 0.380 4.771 0.380 4.771 0.380 4.771 0.772 4.771 0									
C3-Phenanthrenes         0.365         4.771         0.380         4.771         0.380         4.771         0.651         4.771         0.651         4.771         0.672         4.771         0.772         4.771         0.772         4.771         0.772									
C4-Phenanthrenes         0.365         4.771         0.365         4.771         0.365         4.771         0.365         4.771         0.365         4.771         0.365         4.771         0.365         4.771         0.365         4.771         0.365         4.771         0.365         4.771         0.365         4.771         0.380         4.771         0.380         4.771         0.651         4.771         0.651         4.771         0.651         4.771         0.651         4.771         0.651         4.771         0.651         4.771         0.651         4.771         0.651         4.771         0.651         4.771         0.651         4.771         0.772									
Anthracene 0.380 4.771 0.380 4.771 0.380 4.771 0.380 4.771 1.0380 4.771 0.380 4.771 1.0380 4.771									
Fluoranthene									
Pyrene         0.772         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.629 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>									
C1- Pyrenes 0.772 4.771 0.629 4.771 0.629									
C2- Pyrenes         0.772         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.629									
C3- Pyrenes         0.772         4.771         0.772         4.771         0.772         4.771         0.772         4.771         0.772         4.771         0.772         4.771         0.772         4.771         0.772         4.771         0.772         4.771         0.772         4.771         0.772         4.771         0.772         4.771         0.772         4.771         0.772         4.771         0.772         4.771         0.772         4.771         0.772         4.771         0.629									
C4- Pyrenes         0.772         4.771         0.772         4.771         0.772         4.771         0.772         4.771         0.772         4.771         0.772         4.771         0.772         4.771         0.772         4.771         0.772         4.771         0.629									
Naphthobenzothiophene         0.629         4.771         0.629<									
C-1 Naphthobenzothiophenes 0.629 4.771 0.6									
C-2 Naphthobenzothiophenes 0.629 4.771 0.6									
C-3 Naphthobenzothiophenes         0.629         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.629         4.771         0.629         4.771         1.048         4.771         1									
Benzo (a) Anthracene         1.048         4.771         1.048 </td <td>·</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	·								
Chrysene 1.048 4.771 1.048 4.7									
C1- Chrysenes 1.048 4.771 1.04	* /								
C2- Chrysenes         1.048         4.771         0.717         4.771         0.717         4.771         0.717         4.771         0.673         4.771         0.673         4.771         0.673         4.771         0.673         4.771         0.673         4.771         0.963         4.771         0.963         4.771         0.963         4.771         0.804									
C3- Chrysenes 1.048 4.771 1.04									
C4- Chrysenes         1.048         4.771         1.048         4.771         1.048         4.771         1.048         4.771         1.048         4.771         1.048         4.771         1.048         4.771         1.048         4.771         1.048         4.771         1.048         4.771         1.048         4.771         0.717         4.771         0.717         4.771         0.717         4.771         0.717         4.771         0.717         4.771         0.673         4.771         0.673         4.771         0.673         4.771         0.673         4.771         0.673         4.771         0.963         4.771         0.963         4.771         0.963         4.771         0.963         4.771         0.963         4.771         0.963         4.771         0.804         4.771         0.804         4.771         0.804         4.771         0.804         4.771         0.804         4.771         0.804         4.771         0.804         4.771         0.804         4.771         0.804         4.771         0.804         4.771         0.804         4.771         0.804         4.771         0.804         4.771         0.804         4.771         0.804         4.771         0.804         4.771         0.804									
Benzo (b) Fluoranthene         0.717         4.771         0.717         4.771         0.717         4.771         0.717         4.771         0.717         4.771         0.717         4.771         0.673         4.771         0.673         4.771         0.673         4.771         0.673         4.771         0.673         4.771         0.673         4.771         0.673         4.771         0.673         4.771         0.673         4.771         0.963         4.771         0.963         4.771         0.963         4.771         0.963         4.771         0.963         4.771         0.804									
Benzo (k) Fluoranthene         0.673         4.771         0.673         4.771         0.673         4.771         0.673         4.771         0.673         4.771         0.673         4.771         0.673         4.771         0.673         4.771         0.963         4.771         0.963         4.771         0.963         4.771         0.963         4.771         0.804         4.771         0.804         4.771         0.804         4.771         0.804         4.771         0.804         4.771         0.256         4.771         0.256         4.771         0.256         4.771         0.256         4.771         1.870         4.771         1.870         4.771         1.870         4.771         1.870         4.771         1.632         4.771         1.632         4.771         1.632         4.771         1.632         4.771									
Benzo (e) Pyrene     0.963     4.771     0.963     4.771     0.963     4.771     0.963     4.771       Benzo (a) Pyrene     0.804     4.771     0.804     4.771     0.804     4.771     0.804     4.771       Perylene     0.256     4.771     0.256     4.771     0.256     4.771     0.256     4.771       Indeno (1,2,3 - cd) Pyrene     1.870     4.771     1.870     4.771     1.870     4.771     1.870     4.771       Dibenzo (a,h) anthracene     1.632     4.771     1.632     4.771     1.632     4.771									
Benzo (a) Pyrene     0.804     4.771     0.804     4.771     0.804     4.771     0.804     4.771       Perylene     0.256     4.771     0.256     4.771     0.256     4.771     0.256     4.771       Indeno (1,2,3 - cd) Pyrene     1.870     4.771     1.870     4.771     1.870     4.771       Dibenzo (a,h) anthracene     1.632     4.771     1.632     4.771     1.632     4.771	. ,								
Perylene         0.256         4.771         0.256         4.771         0.256         4.771         0.256         4.771         0.256         4.771         0.256         4.771         1.870         4.771         1.870         4.771         1.870         4.771         1.870         4.771         1.870         4.771         1.632         4.771         1.632         4.771         1.632         4.771         1.632         4.771         1.632         4.771									
Indeno (1,2,3 - cd) Pyrene     1.870     4.771     1.870     4.771     1.870     4.771     1.870     4.771       Dibenzo (a,h) anthracene     1.632     4.771     1.632     4.771     1.632     4.771									
Dibenzo (a,h) anthracene 1.632 4.771 1.632 4.771 1.632 4.771									
Description (a.6.)									
2.100 4.7/1 2.100 4.7/1 2.100 4.7/1	,								
	(g, m) por justice	2.100	7.77	2.100	4.771	2.100	4.771	2.105	4.771

## Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Client:	Hovensa
Project Name:	St. Croix Spill

Client ID	3523847-001 PS	Laboratory Water Blank	198 CLIFTON HILL-A	250 CLIFTON HILL-A
RCAT ID	2010355-50	MBW10358A	2010356-01	2010356-03
Sample Matrix	Water	Water	Water	Water
Analytical Instrument	Mustang	Mustang	Mustang	Mustang
% Moisture	0	0	0	0
% Lipid				Ū
Sample Size	1049	1000	1050	1050
Sample Unit-Basis	mi	mi	ml	ml
Units	ug/L	ug/L	ug/L	ug/L
nC-10 Decane	U			
nC-11 Undecane		U	U	U
	U	U	U	U
nC-12 Dodecane nC-13 Tridecane	U	U	U	U
	U	U	U	U
nC-14 Tetradecane nC-15 Pentadecane	U	U	U	U
	U	U	U	U
nC-16 Hexadecane	U	U	U	U
nC-17 Heptadecane	U	U	U	U
Pristane	U	U	U_ N	11 2 U
nC-18 Octadecane	U	U	بها کار	113 111) u
Phytane	U	U		<i>11()</i>
nC-19 Nonadecane	U	U	U	U
nC-20 Eicosane	U	U	U	U
nC-21 Heneicosane	U	U	U	U
nC-22 Docosane	U	U	U	U
nC-23 Tricosane	U	U	U	U
nC-24 Tetracosane	U	U	U	U
nC-25 Pentacosane	U	U	U	U
nC-26 Hexacosane	U	U	U	U
nC-27 Heptacosane	U	U	U	U
nC-28 Octacosane	U	U	U	U
nC-29 Nonacosane	U	U	U	U
nC-30 Triacontane	U	U	U	U
nC-31 Hentriacontane	U	U	U	U
nC-32 Dotriacontane	U	U	U	U
nC-33 Tritriacontane	U	U	U	U
nC-34 Tetratriacontane	U	U	U	U
nC-35 Pentatriacontane	U	U	_/U	U
Total Alkanes	0.000	0.000	00ھرہ	0.000

Surrogate Recovery (%)				
5 Alpha Androstane	0	74	86	88

#### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Client ID	3523847-001 PS	Laboratory Water Blank	198 CLIFTON HILL-A	250 CLIFTON HILL-A
RCAT ID	2010355-50	MBW10358A	2010356-01	2010356-03
Sample Matrix	Water	Water	Water	Water
Analytical Instrument	Mustang	Mustang	Mustang	Mustang
% Moisture	0	0	0	0
% Lipid	0.000	0	0	0
·				
Sample Size	1049	1000	1050	1050
Sample Unit-Basis	ml	ml	ml	ml
Units	ng/L	ng/L	ng/L	ng/L
Naphthalene	U	U	U	U
C1-Naphthalenes	Ü	ŭ	ŭ	Ü
C2-Naphthalenes	Ŭ	ŭ	ŭ	Ü
C3-Naphthalenes	Ü	Ŭ	Ü	Ü
C4-Naphthalenes	ŭ	ŭ	Ü	Ŭ
Fluorene	U	ŭ	ŭ	U
C1-Fluorenes	Ü	ŭ	ŭ	U
C2-Fluorenes	Ü	Ü	ŭ	Ü
C3-Fluorenes	U	Ü	ŭ	Ü
	U	U	U	U
Dibenzothiophene	U	U	U	
C1-Dibenzothiophenes	U	U		U
C2-Dibenzothiophenes	U	U	Ŭ	U
C3- Dibenzothiophenes	-		Ų	U
Phenanthrene	U	U	Ü	U
C1-Phenanthrenes	U	U	U	U
C2-Phenanthrenes	U	U	U	U
C3-Phenanthrenes	U	U	U	U
C4-Phenanthrenes	U	Ü	Ü	U
Anthracene	U	U	U	U
Fluoranthene	U	U	U	U
Pyrene	U	Ų	U	U
C1- Pyrenes	U	U	U	U
C2- Pyrenes	U	U	U	U
C3- Pyrenes	U	U	u	U
C4- Pyrenes	U	U	U	U
Naphthobenzothiophene	U	U	U	U
C-1 Naphthobenzothiophenes	U	U	U	U
C-2 Naphthobenzothiophenes	U	U	U	U
C-3 Naphthobenzothiophenes	U	U	U	U
Benzo (a) Anthracene	U	U	U	U
Chrysene	U	U	U	U
C1- Chrysenes	U	U	U	U
C2- Chrysenes	U	U	U	U
C3- Chrysenes	U	U	U	U
C4- Chrysenes	U	U	U	U
Benzo (b) Fluoranthene	U	U	U	U
Benzo (k) Fluoranthene	U	U	U	U
Benzo (e) Pyrene	U	U	U	U
Benzo (a) Pyrene	U	U	U	U
Perylene	U	U	U	U
Indeno (1,2,3 - cd) Pyrene	U	U	U	U
Dibenzo (a,h) anthracene	U	U	U	U
Benzo (g,h,i) perylene  Total Aromatics	0.000 U	0.000 U	0.000 U	0.000

% Surrogate Recovery				<del></del>
Phenanthrene d-10	0	73	76	77

#### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

riojectivanie.	St. Croix Spiii							
Client ID	352384	7-001 PS	Laboratory	Water Blank	198 CLIF	TON HILL-A	250 CLIFT	ON HILL-A
RCAT ID	2010	355-50	MBW	10358A	2010	356-01	2010	356-03
Sample Matrix	w	ater	W	ater	w	ater	W	ater
Analytical Instrument	Mu	stang	Mus	stang	Mu	stang	Mus	stang
% Moisture		0		0		0		0
% Lipid		0		0		0		0
Sample Size	10	049	10	000	10	050	10	050
Sample Unit-Basis	i	ml	г	ml	1	ml	r	nl
Units	и	g/L	uį	g/L	u	g/L	սլ	g/L
	MDL	RQL	MDL	RQL	MDL	RQL	MDL	RQL
nC-10 Decane	0.016	0.953	0.017	1.000	0.016	0.952	0.016	0.952
nC-11 Undecane	0.012	0.952	0.013	1.000	0.012	0.952	0.012	0.952
nC-12 Dodecane	0.014	0.952	0.015	1.000	0.014	0.952	0.014	0.952
nC-13 Tridecane	0.011	0.952	0.011	1.000	0.011	0.952	0.011	0.952
nC-14 Tetradecane	0.026	0.952	0.027	1.000	0.026	0.952	0.026	0.952
nC-15 Pentadecane	0.023	0.952	0.024	1.000	0.023	0.952	0.023	0.952
nC-16 Hexadecane	0.021	0.952	0.022	1.000	0.021	0.952	0.021	0.952
nC-17 Heptadecane	0.046	0.952	0.048	1.000	0.046	0.952	0.046	0.952
Pristane	0.044	0.952	0.046	1.000	0.044	0.952	0.044	0.952
nC-18 Octadecane	0.067	0.952	0.070	1.000	0.067	0.952	0.067	0.952
Phytane	0.069	0.952	0.073	1.000	0.069	0.952	0.069	0.952
nC-19 Nonadecane	0.038	0.952	0.039	1.000	0.038	0.952	0.038	0.952
nC-20 Eicosane	0.039	0.952	0.041	1.000	0.039	0.952	0.039	0.952
nC-21 Heneicosane	0.033	0.952	0.034	1.000	0.033	0.952	0.033	0.952
nC-22 Docosane	0.066	0.952	0.070	1.000	0.066	0.952	0.066	0.952
nC-23 Tricosane	0.037	0.952	0.039	1.000	0.037	0.952	0.037	0.952
C-24 Tetracosane	0.059	0.952	0.062	1.000	0.059	0.952	0.059	0.952
C-25 Pentacosane	0.186	0.952	0.195	1.000	0.186	0.952	0.186	0.952
C-26 Hexacosane	0.157	0.952	0.165	1.000	0.157	0.952	0.157	0.952
C-27 Heptacosane	0.124	0.952	0.130	1.000	0.124	0.952	0.124	0.952
C-28 Octacosane	0.199	0.952	0.208	1.000	0.199	0.952	0.199	0.952
C-29 Nonacosane	0.150	0.952	0.157	1.000	0.150	0.952	0.150	0.952
C-30 Triacontane	0.083	0.952	0.087	1.000	0.083	0.952	0.083	0.952
C-31 Hentriacontane	0.084	0.952	0.088	1.000	0.084	0.952	0.084	0.952
C-32 Dotriacontane	0.048	0.952	0.051	1.000	0.048	0.952	0.048	0.952
C-33 Tritriacontane	0.070	0.952	0.074	1.000	0.070	0.952	0.070	0.952
nC-34 Tetratriacontane	0.069	0.952	0.073	1.000	0.069	0.952	0.069	0.952
nC-35 Pentatriacontane	0.034	0.952	0.036	1.000	0.034	0.952	0.034	0.952

## Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

rroject name.	St. Cloix Spili							
Client ID	35238	47-001 PS	Laboratory	/ Water Blank	198 CLIF	TON HILL-A	250 CLIF	TON HILL-A
RCAT ID	2010	355-50	MBW	10358A	2010	356-01	66-01 2010356- <del></del>	
Sample Matrix	W	'ater		ater at		ater		ater
·								
Analytical Instrument	MIL	stang	Mu	stang	Mu	stang		stang
% Moisture		0		0		0		0
% Lipid		0		0		0		0
Sample Size	1	049	1	000	1	050	10	050
Sample Unit-Basis		ml		ml		ml		n!
Units		g/L		g/L		g/L		''' g/L
	MDL	RQL	MDL	RQL	MDL	RQL	MDL	
Naphthalene	0.214	4.766	0.225	5.000	0.225	5.000	0.225	RQL 5.000
C1-Naphthalenes	0.214	4.766	0.225	5.000	0.225	5.000	0.225	5.000
C2-Naphthalenes	0.214	4.766	0.225	5.000	0.225	5.000	0.225	5.000
C3-Naphthalenes	0.214	4.766	0.225	5.000	0.225	5.000	0.225	
C4-Naphthalenes	0.214	4.766	0.225	5.000	0.225	5.000	0.225	5.000 5.000
Fluorene	0.490	4.766	0.514	5.000	0.514	5.000		
C1-Fluorenes	0.490	4.766	0.514	5.000	0.514	5.000	0.514 0.514	5.000
C2-Fluorenes	0.490	4.766	0.514	5.000	0.514			5.000
C3- Fluorenes	0.490	4.766	0.514	5.000	0.514	5.000 5.000	0.514	5.000
Dibenzothiophene	0.628	4.766	0.659	5.000	0.659		0.514	5.000
C1-Dibenzothiophenes	0.628	4.766	0.659	5.000		5.000	0.659	5.000
C2-Dibenzothiophenes	0.628	4.766	0.659	5.000	0.659 0.659	5.000 5.000	0.659	5.000
C3- Dibenzothiophenes	0.628	4.766	0.659	5.000			0.659	5.000
Phenanthrene	0.365	4.766	0.383	5.000	0.659 0.383	5.000	0.659	5.000
C1-Phenanthrenes	0.365	4.766	0.383			5.000	0.383	5.000
C2-Phenanthrenes	0.365	4.766	0.383	5.000	0.383	5.000	0.383	5.000
C3-Phenanthrenes	0.365	4.766		5.000	0.383	5.000	0.383	5.000
C4-Phenanthrenes	0.365	4.766	0.383	5.000	0.383	5.000	0.383	5.000
Anthracene	0.379		0.383	5.000	0.383	5.000	0.383	5.000
Fluoranthene	0.651	4.766 4.766	0.398	5.000	0.398	5.000	0.398	5.000
Pyrene	0.771		0.683	5.000	0.683	5.000	0.683	5.000
C1- Pyrenes		4.766	0.809	5.000	0.809	5.000	0.809	5.000
C2- Pyrenes	0.771	4.766	0.809	5.000	0.809	5.000	0.809	5.000
C3- Pyrenes	0.771	4.766	0.809	5.000	0.809	5.000	0.809	5.000
C4- Pyrenes	0.771	4.766	0.809	5.000	0.809	5.000	0.809	5.000
•	0.771	4.766	0.809	5.000	0.809	5.000	0.809	5.000
Naphthobenzothiophene C-1 Naphthobenzothiophenes	0.628	4.766	0.659	5.000	0.659	5.000	0.659	5.000
C-2 Naphthobenzothiophenes	0.628	4.766	0.659	5.000	0.659	5.000	0.659	5.000
C-3 Naphthobenzothiophenes	0.628 0.628	4.766 4.766	0.659 0.659	5.000	0.659	5.000	0.659	5.000
Benzo (a) Anthracene				5.000	0.659	5.000	0.659	5.000
Chrysene	1.047	4.766	1.098	5.000	1.098	5.000	1.098	5.000
•	1.047	4.766	1.098	5.000	1.098	5.000	1.098	5.000
C1- Chrysenes C2- Chrysenes	1.047	4.766	1.098	5.000	1.098	5.000	1.098	5.000
•	1.047	4.766	1.098	5.000	1.098	5.000	1.098	5.000
C3- Chrysenes	1.047	4.766	1.098	5.000	1.098	5.000	1.098	5.000
C4- Chrysenes	1.047	4.766	1.098	5.000	1.098	5.000	1.098	5.000
Benzo (b) Fluoranthene Benzo (k) Fluoranthene	0.716	4.766	0.751	5.000	0.751	5.000	0.751	5.000
* *	0.673	4.766	0.706	5.000	0.706	5.000	0.706	5.000
Benzo (e) Pyrene	0.962	4.766	1.009	5.000	1.009	5.000	1.009	5.000
Benzo (a) Pyrene	0.804	4.766	0.843	5.000	0.843	5.000	0.843	5.000
Perylene	0.256	4.766	0.268	5.000	0.268	5.000	0.268	5.000
Indeno (1,2,3 - cd) Pyrene	1.868	4.766	1.960	5.000	1.960	5.000	1.960	5.000
Dibenzo (a,h) anthracene	1.631	4.766	1.711	5.000	1.711	5.000	1.711	5.000
Benzo (g,h,i) perylene	2.103	4.766	2.206	5.000	2.206	5.000	2.206	5.000

# Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

roject Name:	St. Croix Spill			
Client ID	57 CLIFTON HILL-A	34H CLIFTON HILL-A	309 CLIFTON HILL-A	207 CLIFTON HILL-A
RCAT ID	2010356-05	2010356-07	2010356-09	2010356-11
Sample Matrix	Water	Water	Water	Water
Analytical Instrument	Mustang	Mustang	Mustang	Mustang
% Moisture	0	0	0	0
6 Lipid				
ample Size	1050	1050	1050	1050
iample Unit-Basis	mi	ml	ml	ml
Inits	ug/L	ug/L	ug/L	ug/L
C-10 Decane	U	U	U	ţ
C-11 Undecane	U	U	U	
C-12 Dodecane	U	U	U	
C-13 Tridecane	U	U	U	ĺ
C-14 Tetradecane	U	U	U	(
C-15 Pentadecane	U	U	U	· ·
C-16 Hexadecane	U	U	U	L
C-17 Heptadecane	U	U	U	l
ristane	U ,	mar Uca	U U	AUCT
C-18 Octadecane	U.	V109 20.1	77J ×	0.1155
hytane	.) سحد (	087J × 0.1	199 J J	0.09b J
C-19 Nonadecane	U	U	Ú	بر 0.0% T بر
C-20 Eicosane	U	U	U	ĺ
2-21 Heneicosane	U	U	U	L
C-22 Docosane	U	Ú	U	L
C-23 Tricosane	U	U	U	U
C-24 Tetracosane	U	U	U	U
2-25 Pentacosane	U	U	U	U
C-26 Hexacosane	U	U	U	U
C-27 Heptacosane	U	U	U	U
C-28 Octacosane	U	U	U	U
C-29 Nonacosane	U	U	U	U
C-30 Triacontane	U	U	U	U
C-31 Hentriacontane	U	U	U	Ü
C-32 Dotriacontane C-33 Tritriacontane	U	U	U	U
C-33 Tritriacontane C-34 Tetratriacontane	U	U	U	U
C-34 Pentatriacontane	0	U	U	U
Total Alkanes	0.000	0. <b>960</b>	0,800	0,600
,	C. 151			
	<i>U.</i> 101	0.176	0,211	(/ 18

98

85

85

92

5 Alpha Androstane

# Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Client ID	57 CLIFTON HILL-A	34H CLIFTON HILL-A	309 CLIFTON HILL-A	207 CLIFTON HILL-A
RCAT ID	2010356-05	2010356-07	2010356-09	2010356-11
Sample Matrix	Water	Water	Water	Water
Analytical Instrument	Mustang	Mustang	Mustang	Mustang
% Moisture	0	0	0	0
% Lipid	0	0	0	0
Sample Size	1050	1050	1050	1050
Sample Unit-Basis	ml	ml	ml	ml
Units	ng/L	ng/L	ng/L	ng/L
A				
Naphthalene	U	Ü	U	U
C1-Naphthalenes	Ü	Ü	U	U
C2-Naphthalenes	Ü	U	U	U
C3-Naphthalenes	Ü	U	U	U
C4-Naphthalenes	U	U	U	U
Fluorene	U	U	U	U
C1-Fluorenes	U	U	U	U
C2-Fluorenes	U	U	U	U
C3- Fluorenes	U	U	U	U
Dibenzothiophene	U	U	U	U
C1-Dibenzothiophenes	U	U	U	U
C2-Dibenzothiophenes	U	U	U	U
C3- Dibenzothiophenes	U	U	U	U
Phenanthrene	U	U	U	U
C1-Phenanthrenes	U	U	U	U
C2-Phenanthrenes	U	U	U	U
C3-Phenanthrenes	U	U	U	U
C4-Phenanthrenes	U	U	U	Ū
Anthracene	U	U	U	U
Fluoranthene	U	U	U	U
Pyrene	U	U	U	Ū
C1- Pyrenes	U	U	Ū	Ū
C2- Pyrenes	U	Ū	Ū	Ū
C3- Pyrenes	Ū	Ū	Ü	Ü
C4- Pyrenes	Ū	Ū	Ū	Ü
Naphthobenzothiophene	Ū	Ū	Ü	Ü
C-1 Naphthobenzothiophenes	Ū	Ü	Ü	Ü
C-2 Naphthobenzothiophenes	Ü	Ü	Ü	Ü
C-3 Naphthobenzothiophenes	Ü	Ü	Ü	Ü
Benzo (a) Anthracene	Ü	Ü	Ü	Ü
Chrysene	Ü	Ü	Ü	Ü
C1- Chrysenes	Ü	Ü	ŭ	Ü
C2- Chrysenes	Ü	ŭ	ŭ	Ü
C3- Chrysenes	Ü	ű	Ü	U
C4- Chrysenes	Ü	ŭ	U	U
Benzo (b) Fluoranthene	Ü	Ü	U	
Benzo (k) Fluoranthene	U U	U	U	U
	U			U
Benzo (e) Pyrene		U	U	U
Benzo (a) Pyrene	U	U	U	U
Perylene	U	U	U	U
Indeno (1,2,3 - cd) Pyrene	U	U	U	Ü
Dibenzo (a,h) anthracene	U	U	U	U
Benzo (g,h,i) perylene	0.000	0.000	0.000	U
Total Aromatics	0.000	0.000	0.000	0.000

% Surrogate Recovery				
Phenanthrene d-10	77	74	79	92

#### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

	set of our opin							
Client ID	57 CLIFT	ON HILL-A	34H CLIFT	TON HILL-A	309 CLIF	TON HILL-A	207 CLIFT	TON HILL-A
RCAT ID	2010	356-05	2010.	356-07	2010	356-09	2010	356-11
Sample Matrix	w	ater	W	ater	W	ater	W	ater
Analytical Instrument	Mu	stang	Mu	stang	Mu	stang	Mus	stang
% Moisture		0		0		0		0
% Lipid		0		0		0		0
Sample Size	10	050	10	050	10	050	10	050
Sample Unit-Basis	ı	ml	r	ml	r	ml	r	nl
Units	u	g/L	uį	g/L	u	g/L	uį	g/L
	MDL	RQL	MDL	RQL	MDL	RQL	MDL	RQL
nC-10 Decane	0.016	0.952	0.016	0.952	0.016	0.952	0.016	0.952
nC-11 Undecane	0.012	0.952	0.012	0.952	0.012	0.952	0.012	0.952
nC-12 Dodecane	0.014	0.952	0.014	0.952	0.014	0.952	0.014	0.952
nC-13 Tridecane	0.011	0.952	0.011	0.952	0.011	0.952	0.011	0.952
nC-14 Tetradecane	0.026	0.952	0.026	0.952	0.026	0.952	0.026	0.952
nC-15 Pentadecane	0.023	0.952	0.023	0.952	0.023	0.952	0.023	0.952
nC-16 Hexadecane	0.021	0.952	0.021	0.952	0.021	0.952	0.021	0.952
nC-17 Heptadecane	0.046	0.952	0.046	0.952	0.046	0.952	0.046	0.952
Pristane	0.044	0.952	0.044	0.952	0.044	0.952	0.044	0.952
nC-18 Octadecane	0.067	0.952	0.067	0.952	0.067	0.952	0.067	0.952
Phytane	0.069	0.952	0.069	0.952	0.069	0.952	0.069	0.952
nC-19 Nonadecane	0.038	0.952	0.038	0.952	0.038	0.952	0.038	0.952
nC-20 Eicosane	0.039	0.952	0.039	0.952	0.039	0.952	0.039	0.952
nC-21 Heneicosane	0.033	0.952	0.033	0.952	0.033	0.952	0.033	0.952
nC-22 Docosane	0.066	0.952	0.066	0.952	0.066	0.952	0.066	0.952
nC-23 Tricosane	0.037	0.952	0.037	0.952	0.037	0.952	0.037	0.952
nC-24 Tetracosane	0.059	0.952	0.059	0.952	0.059	0.952	0.059	0.952
nC-25 Pentacosane	0.186	0.952	0.186	0.952	0.186	0.952	0.186	0.952
nC-26 Hexacosane	0.157	0.952	0.157	0.952	0.157	0.952	0.157	0.952
nC-27 Heptacosane	0.124	0.952	0.124	0.952	0.124	0.952	0.124	0.952
nC-28 Octacosane	0.199	0.952	0.199	0.952	0.199	0.952	0.199	0.952
nC-29 Nonacosane	0.150	0.952	0.150	0.952	0.150	0.952	0.150	0.952
nC-30 Triacontane	0.083	0.952	0.083	0.952	0.083	0.952	0.083	0.952
nC-31 Hentriacontane	0.084	0.952	0.084	0.952	0.084	0.952	0.084	0.952
nC-32 Dotriacontane	0.048	0.952	0.048	0.952	0.048	0.952	0.048	0.952
nC-33 Tritriacontane	0.070	0.952	0.070	0.952	0.070	0.952	0.070	0.952
nC-34 Tetratriacontane	0.069	0.952	0.069	0.952	0.069	0.952	0.069	0.952
nC-35 Pentatriacontane	0.034	0.952	0.034	0.952	0.034	0.952	0.034	0.952

## Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Client ID	57 CLIFT	ON HILL-A	34H CLIF	TON HILL-A	309 CLIF	TON HILL-A	207 CLIF	TON HILL-A
RCAT ID	2010	356-05	2010	356-07	2010	356-09	2010	356-11
Sample Matrix	w	ater	w	ater	w	ater		ater
Analytical Instrument		stang		stang		stang		stang
% Moisture	1710	0	IVIG	0	Wid	0		-
				-				0
% Lipid		0		0		0		0
Sample Size	1	050	1	050	1	050	10	050
Sample Unit-Basis	1	ml	1	ml	1	ml	ı	ni
Units	n	g/L	n	g/L	n	g/L	n	g/L
	MDL	RQL	MDL	RQL	MDL	RQL	MDL	RQL
Naphthalene	0.225	5.000	0.225	5.000	0.225	5.000	0.225	5.000
C1-Naphthalenes	0.225	5.000	0.225	5.000	0.225	5.000	0.225	5.000
C2-Naphthalenes	0.225	5.000	0.225	5.000	0.225	5.000	0.225	5.000
C3-Naphthalenes	0.225	5.000	0.225	5.000	0.225	5.000	0.225	5.000
C4-Naphthalenes	0.225	5.000	0.225	5.000	0.225	5.000	0.225	5.000
Fluorene C1-Fluorenes	0.514	5.000	0.514	5.000	0.514	5.000	0.514	5.000
	0.514	5.000	0.514	5.000	0.514	5.000	0.514	5.000
C2-Fluorenes C3- Fluorenes	0.514	5.000	0.514	5.000	0.514	5.000	0.514	5.000
Dibenzothiophene	0.514 0.659	5.000 5.000	0.514	5.000	0.514	5.000	0.514	5.000
C1-Dibenzothiophenes	0.659	5.000	0.659	5.000	0.659	5.000	0.659	5.000
C2-Dibenzothiophenes	0.659	5.000	0.659 0.659	5.000 5.000	0.659	5.000	0.659	5.000
C3- Dibenzothiophenes	0.659	5.000	0.659	5.000	0.659 0.659	5.000	0.659	5.000
Phenanthrene	0.383	5.000	0.383	5.000	0.383	5.000 5.000	0.659 0.383	5.000
C1-Phenanthrenes	0.383	5.000	0.383	5.000	0.383	5.000	0.383	5.000 5.000
C2-Phenanthrenes	0.383	5.000	0.383	5.000	0.383	5.000	0.383	5.000
C3-Phenanthrenes	0.383	5.000	0.383	5.000	0.383	5.000	0.383	5.000
C4-Phenanthrenes	0.383	5.000	0.383	5.000	0.383	5.000	0.383	5.000
Anthracene	0.398	5.000	0.398	5.000	0.398	5.000	0.398	5.000
Fluoranthene	0.683	5.000	0.683	5.000	0.683	5.000	0.683	5.000
Pyrene	0.809	5.000	0.809	5.000	0.809	5.000	0.809	5.000
C1- Pyrenes	0.809	5.000	0.809	5.000	0.809	5.000	0.809	5.000
C2- Pyrenes	0.809	5.000	0.809	5.000	0.809	5.000	0.809	5.000
C3- Pyrenes	0.809	5.000	0.809	5.000	0.809	5.000	0.809	5.000
C4- Pyrenes	0.809	5.000	0.809	5.000	0.809	5.000	0.809	5.000
Naphthobenzothiophene	0.659	5.000	0.659	5.000	0.659	5.000	0.659	5.000
C-1 Naphthobenzothiophenes	0.659	5.000	0.659	5.000	0.659	5.000	0.659	5.000
C-2 Naphthobenzothiophenes	0.659	5.000	0.659	5.000	0.659	5.000	0.659	5.000
C-3 Naphthobenzothiophenes	0.659	5.000	0.659	5.000	0.659	5.000	0.659	5.000
Benzo (a) Anthracene	1.098	5.000	1.098	5.000	1.098	5.000	1.098	5.000
Chrysene	1.098	5.000	1.098	5.000	1.098	5.000	1.098	5.000
C1- Chrysenes	1.098	5.000	1.098	5.000	1.098	5.000	1.098	5.000
C2- Chrysenes C3- Chrysenes	1.098 1.098	5.000	1.098	5.000	1.098	5.000	1.098	5.000
C4- Chrysenes		5.000	1.098	5.000	1.098	5.000	1.098	5.000
Benzo (b) Fluoranthene	1.098 0.751	5.000 5.000	1.098 0.751	5.000 5.000	1.098 0.751	5.000	1.098	5.000
Benzo (k) Fluoranthene	0.706	5.000	0.706	5.000	0.751 0.706	5.000	0.751	5.000
Benzo (e) Pyrene	1.009	5.000	1.009	5.000	1.009	5.000 5.000	0.706 1.009	5.000 5.000
Benzo (a) Pyrene	0.843	5.000	0.843	5.000	0.843	5.000	0.843	5.000
Perviene	0.268	5.000	0.268	5.000	0.268	5.000	0.843	5.000
Indeno (1,2,3 - cd) Pyrene	1.960	5.000	1.960	5.000	1.960	5.000	1.960	5.000
Dibenzo (a,h) anthracene	1.711	5.000	1.711	5.000	1.711	5.000	1.711	5.000
Benzo (g,h,i) perylene	2.206	5.000	2.206	5.000	2.206	5.000	2.206	5.000
		•				0.000	2.200	0.000

## Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Client ID	86 CLIFTON HILL-A	66 CLIFTON HILL-A	75A CLIFTON HILL-A	194A CLIFTON HILL-A	
RCAT ID	2010356-13	2010356-15	2010356-17	2010356-19	
Sample Matrix	Water	Water	Water	Water	
Analytical Instrument	Mustang	Mustang	Mustang	Mustang	
% Moisture	0	0	0	0	
% Lipid					
Sample Size	1050	1050	1050	1050	
Sample Unit-Basis	ml	ml	ml	ml	
Units	ug/L	ug/L	ug/L	ug/L	
nC-10 Decane	U	U	U	U	
nC-11 Undecane	Ü	U	υ U	U	
nC-12 Dodecane	U	U	Ū	Ü	
nC-13 Tridecane	U	Ü	Ū	Ü	
nC-14 Tetradecane	U	Ü	Ū	U	
nC-15 Pentadecane	U	U	Ū	U	
nC-16 Hexadecane	0.076 J	0.036 J	0.095 J	0.132 J	
nC-17 Heptadecane	0.258 J	0.208 J	0.250 J	0.444 J	
Pristane	0.199 J	0.200 J	0.261 J	0.227 J	
nC-18 Octadecane	0.154 J	0.147 J	0.113 J	0.089 J	
Phytane	0.096 J	0.100 J	0.114 J	0.118 J	
nC-19 Nonadecane	U	0.051 J	0.041 J	U	
nC-20 Eicosane	U	U	U	U	
nC-21 Heneicosane	U	U	U	U	
nC-22 Docosane	υ	U	U	U	
nC-23 Tricosane	U	U	U	U	
nC-24 Tetracosane	U	U	U	U	
nC-25 Pentacosane	U	U	U	U	
nC-26 Hexacosane	U	U	U	U	
nC-27 Heptacosane	U	U	υ	U	
nC-28 Octacosane	U	υ	U	U	
nC-29 Nonacosane	U	U	U	U	
nC-30 Triacontane	U	U	U	U	
nC-31 Hentriacontane	0.158 J	U	U	U	
nC-32 Dotriacontane	0.089 J	U	U	U	
nC-33 Tritriacontane	0,105 J	U	U	U	
nC-34 Tetratriacontane	U	U	U	U	
nC-35 Pentatriacontane	U	U	U	U	
Total Alkanes	1.13	0.742	0.873	1.01	

Surrogate Recovery (%)				
5 Alpha Androstane	79	80	76	75

# Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Client ID	86 CLIFTON HILL-A	66 CLIFTON HILL-A	75A CLIFTON HILL-A	194A CLIFTON HILL-A
RCAT ID	2010356-13	2010356-15	2010356-17	2010356-19
Sample Matrix	Water	Water	Water	Water
Analytical Instrument	Mustang	Mustang	Mustang	Mustang
% Moisture	0	0	0	0
% Lipid	0.000	0	0	
·				0
Sample Size	1050	1050	1050	1050
Sample Unit-Basis	ml	ml	ml	ml
Units	ng/L	ng/L	ng/L	ng/L
Manhthalana				
Naphthalene	U U	U	Ų	U
C1-Naphthalenes		U	Ü	U
C2-Naphthalenes	U	U	Ü	U
C3-Naphthalenes	U	U	U	U
C4-Naphthalenes	U	U	U	U
Fluorene	U	U	U	U
C1-Fluorenes	U	U	U	U
C2-Fluorenes	U	U	U	U
C3- Fluorenes	U	U	U	U
Dibenzothiophene	U	U	U	U
C1-Dibenzothiophenes	U	U	U	U
C2-Dibenzothiophenes	U	U	U	U
C3- Dibenzothiophenes	U	U	U	U
Phenanthrene	U	U	U	U
C1-Phenanthrenes	U	U	U	0.616 J
C2-Phenanthrenes	U	U	U	U
C3-Phenanthrenes	U	U	U	U
C4-Phenanthrenes	U	U	U	U
Anthracene	U	Ŭ	U	υ
Fluoranthene	U	U	U	U
Pyrene	U	U	U	U
C1- Pyrenes	U	U	U	U
C2- Pyrenes	U	Ŭ	U	U
C3- Pyrenes	U	U	U	U
C4- Pyrenes	U	U	U	Ü
Naphthobenzothiophene	U	U	U	Ū
C-1 Naphthobenzothiophenes	U	U	U	Ū
C-2 Naphthobenzothiophenes	U	U	U	Ū
C-3 Naphthobenzothiophenes	U	U	U	Ũ
Benzo (a) Anthracene	U	U	Ü	Ū
Chrysene	U	U	Ŭ	Ū
C1- Chrysenes	U	U	Ū	Ü
C2- Chrysenes	U	Ū	Ū	Ü
C3- Chrysenes	U	Ü	Ū	Ü
C4- Chrysenes	Ū	Ū	Ū	Ü
Benzo (b) Fluoranthene	U	Ū	Ū	Ü
Benzo (k) Fluoranthene	Ū	Ü	Ü	Ü
Benzo (e) Pyrene	Ū	Ü	Ü	Ü
Benzo (a) Pyrene	Ü	υ	ŭ	Ü
Perylene	Ü	Ü	ŭ	U
Indeno (1,2,3 - cd) Pyrene	Ü	ŭ	ŭ	U
Dibenzo (a,h) anthracene	Ü	Ü	Ŭ	U
Benzo (g,h,i) perylene	Ü	Ü	Ü	U
Total Aromatics	0.000	0.000	0.000	0.616

% \$urrogate Recovery				
Phenanthrene d-10	75	75	73	74

#### Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Client: Hovensa
Project Name: St. Croix Spill

Client ID	86 CLIFTO	ON HILL-A	66 CLIFT	ON HILL-A	75A CLIFT	ON HILL-A	194A CLIF	TON HILL-A
RCAT ID	20103	356-13	2010	356-15	2010	356-17	2010	356-19
Sample Matrix	Wa	iter	w	ater	W:	ater	W	ater
Analytical Instrument	Mus	tang	Mu:	stang	Mus	stang	Mus	stang
% Moisture	(	o		0		0		0
% Lipid	(	)		0		0		0
Sample Size	10	50	10	050	10	050	10	050
Sample Unit-Basis	n	nl	r	ml	г	nl	r	nl
Units	ug	<u>s</u> /L	uį	g/L	uį	g/L	uş	z/L
	MDL	RQL	MDL	RQL	MDL	RQL	MDL	RQL
nC-10 Decane	0.016	0.952	0.016	0.952	0.016	0.952	0.016	0.952
nC-11 Undecane	(0.125)	9.804	0.012	0.952	0.012	0.952	0.012	0.952
nC-12 Dodecane	0.144	9.804	0.014	0.952	0.014	0.952	0.014	0.952
nC-13 Tridecane	0.111	9.804	0.011	0.952	0.011	0.952	0.011	0.952
nC-14 Tetradecane	0.267	9.804	0.026	0.952	0.026	0.952	0.026	0.952
nC-15 Pentadecane	0.235	9.804	0.023	0.952	0.023	0.952	0.023	0.952
nC-16 Hexadecane	0.220	9.804	0.021	0.952	0.021	0.952	0.021	0.952
nC-17 Heptadecane	0.470	9.804	0.046	0.952	0.046	0.952	0.046	0.952
Pristane	0.455	9.804	0.044	0.952	0.044	0.952	0.044	0.952
nC-18 Octadecane	0.691	9.804	0.067	0.952	0.067	0.952	0.067	0.952
Phytane	0.711	9.804	0.069	0.952	0.069	0.952	0.069	0.952
nC-19 Nonadecane	0.386	9.804	0.038	0.952	0.038	0.952	0.038	0.952
nC-20 Eicosane	0.406	9.804	0.039	0.952	0.039	0.952	0.039	0.952
nC-21 Heneicosane	0.337	9.804	0.033	0.952	0.033	0.952	0.033	0.952
nC-22 Docosane	0.682	9.804	0.066	0.952	0.066	0.952	0.066	0.952
nC-23 Tricosane	0.381	9.804	0.037	0.952	0.037	0.952	0.037	0.952
nC-24 Tetracosane	0.603	9.804	0.059	0.952	0.059	0.952	0.059	0.952
nC-25 Pentacosane	1.910	9.804	0.186	0.952	0.186	0.952	0.186	0.952
nC-26 Hexacosane	1.616	9.804	0.157	0.952	0.157	0.952	0.157	0.952
nC-27 Heptacosane	1.277	9.804	0.124	0.952	0.124	0.952	0.124	0.952
nC-28 Octacosane	2.044	9.804	0.199	0.952	0.199	0.952	0.199	0.952
nC-29 Nonacosane	1.539	9.804	0.150	0.952	0.150	0.952	0.150	0.952
nC-30 Triacontane	0.851	9.804	0.083	0.952	0.083	0.952	0.083	0.952
nC-31 Hentriacontane	0.865	9.804	0.084	0.952	0.084	0.952	0.084	0.952
nC-32 Dotriacontane	0.495	9.804	0.048	0.952	0.048	0.952	0.048	0.952
nC-33 Tritriacontane	0.725	9.804	0.070	0.952	0.070	0.952	0.070	0.952
nC-34 Tetratriacontane	0.711	9.804	0.069	0.952	0.069	0.952	0.069	0.952
nC-35 Pentatriacontane	0.351	9.804	0.034	0.952	0.034	0.952	0.034	0.952

Allhots 10X delation

# Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

RCAT   ID   2010356-13   2010356-15   2010356-17   2010356-19   2010									
Sample Matrix         Water         Water         Water         Water         Mustang         Mustang         Analytical Instrument         Analytical Instrument         Mustang         0	Client ID	86 CLIFT	ON HILL-A	66 CLIFT	ON HILL-A	75A CLIFT	ON HILL-A	194A CLIF	TON HILL-A
Analytical instrument Analytical instrument  Mustang  Mus	RCAT ID	2010	356-13	2010	356-15	20103	356-17	2010	356-19
Analytical instrument Analytical instrument  Mustang  Mus	Sample Matrix	W	ater	w:	ater	Wa	ater	Wa	ater
% Moisture         0 <th< td=""><td>·</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	·								
% ipid         0         0         0         0         0         0           Sample Sire         1050         1050         1050         1050         1050           Sample Sire         msl         msl <t< td=""><td>·</td><td></td><td></td><td></td><td>-</td><td></td><td></td><td></td><td>•</td></t<>	·				-				•
Sample Size   1050	% Moisture		0		0	1	0		D
Montage	% Lipid		0		0	;	0		0
Sample Unit-Basis         m/L	Sample Size	10	050	10	050	10	)50	10	50
Naphthalene	Sample Unit-Basis	ı	ml	r	ni	r	ni	r	nl
Mpt	'							n	<b>9</b> /I
Naphthalene	Onis								
Ci-Naphthalenes 0.214 4.762 0.	Nanhthalene								
C2-Naphthalenes         0.214         4,762         0.214         4,762         0.214         4,762         0.214         4,762         0.214         4,762         0.214         4,762         0.214         4,762         0.214         4,762         0.214         4,762         0.214         4,762         0.214         4,762         0.214         4,762         0.214         4,762         0.490         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627									
C3-Haphthalenes         0.214         4,762         0.214         4,762         0.214         4,762         0.214         4,762         0.214         4,762         0.214         4,762         0.214         4,762         0.214         4,762         0.214         4,762         0.490         4,762         0.490         4,762         0.490         4,762         0.490         4,762         0.490         4,762         0.490         4,762         0.490         4,762         0.490         4,762         0.490         4,762         0.490         4,762         0.490         4,762         0.490         4,762         0.490         4,762         0.490         4,762         0.490         4,762         0.490         4,762         0.490         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627									
C4-Haphthalienes         0 214         4 762         0 214         4 762         0 214         4 762         0 490         4 762         0 627         4 762         0 627         4 762         0 627         4 762         0 627         4 762         0 627         4 762         0 627         4 762         0 627         4 762         0 627         4 762         0 627         4 762         0 627         4 762         0 627         4 762         0 627         4 762         0 627         4 762         0 627         4 762         0 627         4 762         0 627         4 762         0 627         4 762         0 627         4 762         0 627	•								
Fluoreine	•								4.762
C1-Fluorenes 0,490 4,762 0,490 4,762 0,490 4,762 0,490 4,762 0,490 4,762 0,490 4,762 C2-Fluorenes 0,490 4,762 0,490 4,762 0,490 4,762 0,490 4,762 C3-Fluorenes 0,690 4,762 0,690 4,762 0,697 4,762 0,627 4,762 0,771 4,762 0,7									
C2-Fluorenes 0.490 4.762 0.490 4.762 0.490 4.762 0.490 4.762 0.490 4.762 0.490 4.762 0.490 4.762 0.390 4.762 0.390 4.762 0.390 4.762 0.490 4.762 0.490 4.762 0.490 4.762 0.490 4.762 0.490 4.762 0.490 4.762 0.490 4.762 0.490 4.762 0.490 4.762 0.490 4.762 0.627 4.762 0.365 4.762 0.379								0.490	
C3- Fluorenes 0,490 4,762 0,490 4,762 0,490 4,762 0,490 4,762 0,490 4,762 0,490 4,762 0,527 4,762 0,525 4,762 0,527 4,762 0,52						0.490	4.762	0.490	4.762
Dibbracthiophenes						0.490	4.762	0.490	4.762
C1-Dibenzothiophenes         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.365 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>4.762</td>									4.762
C2-Dibenzothiophenes         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.627         4,762         0.365 </td <td></td> <td></td> <td></td> <td></td> <td>4.762</td> <td>0.627</td> <td>4.762</td> <td>0.627</td> <td>4.762</td>					4.762	0.627	4.762	0.627	4.762
C3-Dibenzothiophenes         0.627         4.762         0.627         4.762         0.627         4.762         0.365         4.762         0.379 </td <td></td> <td></td> <td></td> <td></td> <td>4.762</td> <td>0.627</td> <td>4.762</td> <td>0.627</td> <td>4.762</td>					4.762	0.627	4.762	0.627	4.762
Phenanthrene         0.365         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.371         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771		0.627	4.762	0.627	4.762	0.627	4.762	0.627	4.762
C2-Phenanthrenes         0.365         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.371         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771	•	0.365	4.762	0.365	4.762	0.365	4.762	0.365	4.762
C2-Phenanthrenes 0.365 4.762 0.379 4.762 0.371 4.762 0.771 4.762 0.371 4.762 0	C1-Phenanthrenes	0.365	4.762	0.365	4.762	0.365	4.762	0.365	4.762
C4-Phenanthrenes         0.365         4.762         0.365         4.762         0.365         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.365         4.762         0.365         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.379         4.762         0.650         4.762         0.650         4.762         0.650         4.762         0.650         4.762         0.650         4.762         0.627         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627		0.365	4.762	0.365	4.762	0.365	4.762	0.365	4.762
Anthracene   0.379   4.762   0.379   4.762   0.379   4.762   0.379   4.762   0.379   4.762   0.650   4.762   0.650   4.762   0.650   4.762   0.650   4.762   0.650   4.762   0.650   4.762   0.650   4.762   0.650   4.762   0.650   4.762   0.650   4.762   0.650   4.762   0.771   4.762   0.627   4.762   0	C3-Phenanthrenes	0.365	4.762	0.365	4.762	0.365	4.762	0.365	4.762
Fluoranthene         0.650         4.762         0.650         4.762         0.650         4.762         0.771         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627	C4-Phenanthrenes	0.365	4.762	0.365	4.762	0.365	4.762	0.365	4.762
Pyrene         0.771         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627 <t< td=""><td>Anthracene</td><td>0.379</td><td>4.762</td><td>0.379</td><td>4.762</td><td>0.379</td><td>4.762</td><td>0.379</td><td>4.762</td></t<>	Anthracene	0.379	4.762	0.379	4.762	0.379	4.762	0.379	4.762
C1- Pyrenes         0.771         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627         4.762         0.627	Fluoranthene	0.650	4.762	0.650	4.762	0.650	4.762	0.650	4.762
C2- Pyrenes         0.771         4.762         0.627         4.762         0.627	Pyrene Pyrene	0.771	4.762	0.771	4.762	0.771	4.762	0.771	4.762
C3- Pyrenes         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.627	C1- Pyrenes	0.771	4.762				4.762		
C4- Pyrenes         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.771         4.762         0.627	C2- Pyrenes								
Naphthobenzothiophene         0.627         4.762         0.046         4.762         0.046<	C3- Pyrenes								
C-1 Naphthobenzothiophenes 0.627 4.762 0.627 0.627 4.762 0.627 0.6									
C-2 Naphthobenzothiophenes 0.627 4.762 0.625 4.762 0.6							,		
C-3 Naphthobenzothiophenes 0.627 4.762 0.627 4.762 0.627 4.762 0.627 4.762 0.627 4.762 0.627 4.762 0.627 4.762 0.627 4.762 0.627 4.762 0.627 4.762 0.627 4.762 0.627 4.762 0.627 4.762 0.627 4.762 0.627 4.762 0.627 4.762 0.627 0.6	·								
Benzo (a) Anthracene         1.046         4.762         1.046 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>									
Chrysene         1.046         4.762         1.046									
C1- Chrysenes         1.046         4.762         1.046	* *								
C2- Chrysenes         1.046         4.762         0.715         4.762         0.715         4.762         0.715         4.762         0.715         4.762         0.715         4.762         0.715         4.762         0.672         4.762         0.672         4.762         0.672         4.762         0.672         4.762         0.672         4.762         0.672         4.762         0.672         4.762         0.961         4.762         0.672									
C3- Chrysenes 1.046 4.762 1.046 1.046 4.762 1.046 1.04	*								
C4- Chrysenes     1.046     4.762     1.046     4.762     1.046     4.762     1.046     4.762       Benzo (b) Fluoranthene     0.715     4.762     0.715     4.762     0.715     4.762     0.715     4.762       Benzo (k) Fluoranthene     0.672     4.762     0.672     4.762     0.672     4.762     0.672     4.762       Benzo (e) Pyrene     0.961     4.762     0.961     4.762     0.961     4.762     0.961     4.762       Benzo (a) Pyrene     0.803     4.762     0.803     4.762     0.803     4.762     0.803     4.762       Perylene     0.255     4.762     0.255     4.762     0.255     4.762     0.255     4.762       Indeno (1,2,3 - cd) Pyrene     1.866     4.762     1.866     4.762     1.866     4.762     1.866     4.762       Dibenzo (a,h) anthracene     1.629     4.762     1.629     4.762     1.629     4.762     1.629     4.762	,								
Benzo (b) Fluoranthene         0.715         4.762         0.715         4.762         0.715         4.762         0.715         4.762         0.715         4.762         0.715         4.762         0.715         4.762         0.715         4.762         0.672         4.762         0.672         4.762         0.672         4.762         0.672         4.762         0.672         4.762         0.672         4.762         0.672         4.762         0.961         4.762         0.961         4.762         0.961         4.762         0.961         4.762         0.961         4.762         0.803         4.762         0.803         4.762         0.803         4.762         0.803         4.762         0.803         4.762         0.803         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255	•								
Benzo (k) Fluoranthene         0.672         4.762         0.672         4.762         0.672         4.762         0.672         4.762         0.672         4.762         0.672         4.762         0.961         4.762         0.961         4.762         0.961         4.762         0.961         4.762         0.803         4.762         0.803         4.762         0.803         4.762         0.803         4.762         0.803         4.762         0.803         4.762         0.803         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.803         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255	•								
Benzo (e) Pyrene     0.961     4.762     0.961     4.762     0.961     4.762     0.961     4.762       Benzo (a) Pyrene     0.803     4.762     0.803     4.762     0.803     4.762     0.803     4.762       Perylene     0.255     4.762     0.255     4.762     0.255     4.762     0.255     4.762       Indeno (1,2,3 - cd) Pyrene     1.866     4.762     1.866     4.762     1.866     4.762     1.866     4.762       Dibenzo (a,h) anthracene     1.629     4.762     1.629     4.762     1.629     4.762     1.629     4.762	. ,								
Benzo (a) Pyrene     0.803     4.762     0.803     4.762     0.803     4.762     0.803     4.762       Perylene     0.255     4.762     0.255     4.762     0.255     4.762     0.255     4.762       Indeno (1,2,3 - cd) Pyrene     1.866     4.762     1.866     4.762     1.866     4.762       Dibenzo (a,h) anthracene     1.629     4.762     1.629     4.762     1.629     4.762									
Perylene         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         0.255         4.762         1.866         4.762         1.866         4.762         1.866         4.762         1.866         4.762         1.629									
Indeno (1,2,3 - cd) Pyrene         1.866         4.762         1.866         4.762         1.866         4.762         1.866         4.762           Dibenzo (a,h) anthracene         1.629         4.762         1.629         4.762         1.629         4.762									
Dibenzo (a,h) anthracene 1.629 4.762 1.629 4.762 1.629 4.762 1.629 4.762									
2012 4.101 4.102 2.101 4.102 2.101 4.102 2.101 4.102									
	Source (girin) por yielle	2.101	02	2.701	02		02		32

# Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

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Client ID	D-8501 NO.2	LCS	LCSD	
RCAT ID	2010356-21	LCS2010358A	LCS2010358ADUP	
Sample Matrix	Oil	Water	Water	
Analytical Instrument	Mustang	Mustang	Mustang	
% Moisture	0	0	0	
% Lipid				
Sample Size	510	1000	1000	
Sample Unit-Basis	mg	ml	mi	
Units	ug/g	ug/L	ug/L	
nC-10 Decane	1790	2.06	2.35	
nC-11 Undecane	212	2.30	2.65	
nC-12 Dodecane	867	2.65	3.08	
nC-13 Tridecane	386	2.62	3.14	
nC-14 Tetradecane	137	2.64	3.19	
nC-15 Pentadecane	U	2.83	2.78	
nC-16 Hexadecane	3.39 J	2.85	2.87	
nC-17 Heptadecane	1.17 J	2.66	2.66	
Pristane	U	3.13	2.98	
nC-18 Octadecane	U	2.86	2.71	
Phytane	1.11 J	2.97	2.84	
nC-19 Nonadecane	U	2.98	2.75	
nC-20 Eicosane	U	3.02	2.97	
nC-21 Heneicosane	U	3.01	2.94	
nC-22 Docosane	U	3.01	2.92	
nC-23 Tricosane	U	3.01	2.92	
nC-24 Tetracosane	U	2.97	2.86	
nC-25 Pentacosane	U	2.69	2.69	
nC-26 Hexacosane	U	2.64	2.62	
nC-27 Heptacosane	U	2.55	2.52	
nC-28 Octacosane	U	2.46	2.40	
nC-29 Nonacosane	U	2.26	2.22	
nC-30 Triacontane	U	3.28	3.13	
nC-31 Hentriacontane	U	2.79	2.68	
nC-32 Dotriacontane	U	2.34	2.16	
nC-33 Tritriacontane	U	3.75	3.61	
nC-34 Tetratriacontane	U	3.07	2.92	
nC-35 Pentatriacontane	U	2.43	2.45	
Total Alkanes	3400	<b>7</b> 7. <b>8</b>	7 <b>8.0</b>	

Surrogate Recovery (%)	According Co.			
5 Alpha Androstane	0	55	52	

#### Louisiana State University **Department of Environmental Sciences** Response & Chemical Assessment Team

Project Client:	Hovensa			
Project Name:	St. Croix Spill			
Client ID	D-8501 NO.2	LCS	LCSD	
Client ID	5 6361 NO.2	103	icob	
RCAT ID	2010356-21	LCS2010358A	LCS2010358ADUP	
Sample Matrix	Oil	Water	Water	
Analytical Instrument	Mustang	Mustang	Mustang	
% Moisture	0	0	0	
% Lipid	0	0	0	
Sample Size	510	1000	1000	
Sample Unit-Basis	mg	ml	ml	
Units	ug/Kg	ng/L	ng/L	
Naphthalene	52100	1880	2070	
C1-Naphthalenes	43900	U	U	
C2-Naphthalenes	14000	U	Ü	
C3-Naphthalenes	U	U	U	
C4-Naphthalenes	U	U	U	
Fluorene	U	2830	2680	
C1-Fluorenes	U	U	U	
C2-Fluorenes	U	U	U	
C3- Fluorenes	U	U	U	
Dibenzothiophene	1.05 J	2740	2590	
C1-Dibenzothiophenes	0.818 J	U	Ü	
C2-Dibenzothiophenes	U	U	Ü	
C3- Dibenzothiophenes Phenanthrene	U 0.720 J	U	U	
C1-Phenanthrenes	0.720 J U	2440 U	2300	
C2-Phenanthrenes	Ü	U U	U U	
C3-Phenanthrenes	Ü	U	Ü	
C4-Phenanthrenes	Ü	U	Ü	
Anthracene	0.496 J	2800	2660	
Fluoranthene	U.450 V	2490	2540	
Pyrene	Ü	2530	2560	
C1- Pyrenes	ŭ	1.08 J	1.08 J	
C2- Pyrenes	Ü	U	ν.σο σ	
C3- Pyrenes	Ü	ŭ	Ü	
C4- Pyrenes	Ū	Ü	Ü	
Naphthobenzothiophene	U	Ū	Ū	
C-1 Naphthobenzothiophenes	0.655 J	U	U	
C-2 Naphthobenzothiophenes	U	U	U	
C-3 Naphthobenzothiophenes	U	U	U	
Benzo (a) Anthracene	U	2520	2510	
Chrysene	U	2510	2530	
C1- Chrysenes	U	U	U	
C2- Chrysenes	U	U	U	
C3- Chrysenes	U	U	U	
C4- Chrysenes	U	U	U	
Benzo (b) Fluoranthene	U	2310	2300	
Senzo (k) Fluoranthene	U	2850	2820	
Benzo (e) Pyrene	U	2260	2310	
Benzo (a) Pyrene Perylene	U U	1460	1630	
ndeno (1,2,3 - cd) Pyrene	Ü	2030 1390	2050 1390	
Dibenzo (a,h) anthracene	Ü	1690	1390 1720	
Benzo (g,h,i) perylene	Ü	1390	1500	
Total Aromatics	110000	38100	38200	

% Surrogate Recovery				
Phenanthrene d-10	0	53	50	

## Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Name:	St. Croix Spill					
Client ID	D-8501 NO.2		LCS		LCSD	
RCAT ID	2010356-21		LCS2010358A		LCS2010358ADUP	
Sample Matrix	Oil		Water		Water	
Analytical Instrument	Mustang		Mustang		Mustang	
% Moisture	0			0		0
% Lipid	0			0		0
Sample Size	510		1000		1000	
Sample Unit-Basis	mg		r	ml		ni
Units	ug/g		ug/L		u <sub>{</sub>	g/L
	MDL	RQL	MDL	RQL	MDL	RQL
nC-10 Decane	0.166	9.804	0.017	1.000	0.017	1.000
nC-11 Undecane	0.125	9.804	0.013	1.000	0.013	1.000
nC-12 Dodecane	0.144	9.804	0.015	1.000	0.015	1.000
nC-13 Tridecane	0.111	9.804	0.011	1.000	0.011	1.000
nC-14 Tetradecane	0.267	9.804	0.027	1.000	0.027	1.000
nC-15 Pentadecane	0.235	9.804	0.024	1.000	0.024	1.000
nC-16 Hexadecane	0.220	9.804	0.022	1.000	0.022	1.000
nC-17 Heptadecane	0.470	9.804	0.048	1.000	0.048	1.000
Pristane	0.455	9.804	0.046	1.000	0.046	1.000
nC-18 Octadecane	0.691	9.804	0.070	1.000	0.070	1.000
Phytane	0.711	9.804	0.073	1.000	0.073	1.000
nC-19 Nonadecane	0.386	9.804	0.039	1.000	0.039	1.000
nC-20 Eicosane	0.406	9.804	0.041	1.000	0.041	1.000
nC-21 Heneicosane	0.337	9.804	0.034	1.000	0.034	1.000
nC-22 Docosane	0.682	9.804	0.070	1.000	0.070	1.000
nC-23 Tricosane	0.381	9.804	0.039	1.000	0.039	1.000
nC-24 Tetracosane	0.603	9.804	0.062	1.000	0.062	1.000
nC-25 Pentacosane	1.910	9.804	0.195	1.000	0.195	1.000
nC-26 Hexacosane	1.616	9.804	0.465	1.000	0.165	1.000
nC-27 Heptacosane	1.277	9.804	0.130	1.000	0.130	1.000
nC-28 Octacosane	2.044	9.804	0.208	1.000	0.208	1.000
nC-29 Nonacosane	1.539	9.804	0.157	1.000	0.157	1.000
nC-30 Triacontane	0.851	9.804	0.087	1.000	0.087	1.000
nC-31 Hentriacontane	0.865	9.804	0.088	1.000	0.088	1.000
nC-32 Dotriacontane	0.495	9.804	0.051	1.000	0.051	1.000
nC-33 Tritriacontane	0.725	9.804	0.074	1.000	0.074	1.000
nC-34 Tetratriacontane	0.711	9.804	0.073	1.000	0.073	1.000
nC-35 Pentatriacontane	0.351	9.804	0.036	1.000	0.036	1.000

# Louisiana State University Department of Environmental Sciences Response & Chemical Assessment Team

Project Name:	St. Croix Spill						
Client ID	D-8501 NO.2		LCS		LCSD		
RCAT ID	2010356-21		LCS20	LCS2010358A		358ADUP	
Sample Matrix	Oil		w	Water		ater	
Analytical Instrument	Mustang		Ma	stang		stang	
% Moisture	0			0		0	
	0			0			
% Lipid						0	
Sample Size	510		10	000	10	000	
Sample Unit-Basis	mg		1	ml		nl	
Units	ug/Kg		ng/L			g/L	
	MDL	RQL	MDL	RQL	MDL	RQL	 
Naphthalene	0.214	4.762	0.214	4.762	0.214	4.762	
C1-Naphthalenes	0.214	4.762	0.214	4.762	0.214	4.762	
C2-Naphthalenes	0.214	4.762	0.214	4.762	0.214	4.762	
C3-Naphthalenes C4-Naphthalenes	0.214	4.762	0.214	4.762	0.214	4.762	
Fluorene	0.214 0.490	4.762 4.762	0.214	4.762	0.214	4.762	
C1-Fluorenes	0.490	4.762 4.762	0.490 0.490	4.762	0.490	4.762	
C2-Fluorenes	0.490	4.762	0.490	4.762 4.762	0.490 0.490	4.762 4.762	
C3- Fluorenes	0.490	4.762	0.490	4.762	0.490	4.762	
Dibenzothiophene	0.627	4.762	0.627	4.762	0.627	4.762	
C1-Dibenzothiophenes	0.627	4.762	0.627	4.762	0.627	4.762	
C2-Dibenzothiophenes	0.627	4.762	0.627	4.762	0.627	4.762	
C3- Dibenzothiophenes	0.627	4.762	0.627	4.762	0.627	4.762	
Phenanthrene	0.365	4.762	0.365	4.762	0.365	4.762	
C1-Phenanthrenes	0.365	4.762	0.365	4.762	0.365	4.762	
C2-Phenanthrenes	0.365	4.762	0.365	4.762	0.365	4.762	
C3-Phenanthrenes	0.365	4.762	0.365	4.762	0.365	4.762	
C4-Phenanthrenes	0.365	4.762	0.365	4.762	0.365	4.762	
Anthracene	0.379	4.762	0.379	4.762	0.379	4.762	
Fluoranthene	0.650	4.762	0.650	4.762	0.650	4.762	
Pyrene	0.771	4.762	0.771	4.762	0.771	4.762	
C1- Pyrenes C2- Pyrenes	0.771 0.771	4.762 4.762	0.771 0.771	4.762	0.771	4.762	
C3- Pyrenes	0.771	4.762	0.771	4.762 4.762	0.771	4.762	
C4- Pyrenes	0.771	4.762	0.771	4.762	0.771 0.771	4.762 4.762	
Naphthobenzothiophene	0.627	4.762	0.627	4.762	0.627	4.762	
C-1 Naphthobenzothiophenes	0.627	4.762	0.627	4.762	0.627	4.762	
C-2 Naphthobenzothiophenes	0.627	4.762	0.627	4.762	0.627	4.762	
C-3 Naphthobenzothiophenes	0.627	4.762	0.627	4.762	0.627	4,762	
Benzo (a) Anthracene	1.046	4.762	1.046	4.762	1.046	4.762	
Chrysen <b>e</b>	1.046	4.762	1.046	4.762	1.046	4.762	
C1- Chrysenes	1.046	4.762	1.046	4.762	1.046	4.762	
C2- Chrysenes	1.046	4.762	1.046	4.762	1.046	4.762	
C3- Chrysenes	1.046	4.762	1.046	4.762	1.046	4.762	
C4- Chrysenes	1.046	4.762	1.046	4.762	1.046	4.762	
Benzo (b) Fluoranthene	0.715	4.762	0.715	4.762	0.715	4.762	
Benzo (k) Fluoranthene	0.672	4.762	0.672	4.762	0.672	4.762	
Benzo (e) Pyrene	0.961	4.762	0.961	4.762	0.961	4.762	
Benzo (a) Pyrene Perylene	0.803 0.255	4.762 4.762	0.803	4.762	0.803	4.762	
Indeno (1,2,3 - cd) Pyrene	0.∠55 1.866	4.762 4.762	0.255 1.866	4.762 4.762	0.255	4.762	
Dibenzo (a,h) anthracene	1.629	4.762	1.629	4.762 4.762	1.866 1.629	4.762 4.762	
Benzo (g,h,i) perylene	2.101	4.762	2.101	4.762	2.101	4.762 4.762	
(Simily Perfective	2	7.7 02	2.101	4.702	2.101	7.702	